United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Tennessee Agricultural Experiment Station, Clay County Board of Commissioners, Tennessee Department of Agriculture, and Clay County Soil Conservation District

Soil Survey of Clay County, Tennessee

How To Use This Soil Survey

The information provided in this publication can be useful in planning the use and management of small areas. The text includes descriptions of detailed soil map units and provides an explanation of the information presented in the tables, or soil reports, which are available via the Web Soil Survey of the Natural Resources Conservation Service (accessible from the Soils Web site at http://soils.usda.gov). The publication also includes a glossary of terms used in the text and tables and a list of references.

Bookmarks and links in the publication allow the user to navigate from one part of the text to another. Maps showing soil lines and map unit symbols can be accessed for a particular area of interest through Web Soil Survey (by clicking on the "Soil Map" tab). The symbols on the maps represent the detailed soil map units in the area. These map units are listed in the bookmarks panel of the text. Information about the map units can be accessed by clicking on the appropriate bookmark.

The bookmarks panel of the text outlines the contents of this publication.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in December 2001. Soil names and descriptions were approved in December 2001. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2001. This survey was made cooperatively by the Natural Resources Conservation Service, the Clay County Board of Commissioners, the Tennessee Department of Agriculture, and the Tennessee Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Clay County Soil Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Cover: A scene of Plumlee Bottom from Seven Sisters Bluff. It was here that Daniel Boone camped with his hunting party during the winter of 1770 *(3)*. This area along the Cumberland River is dominantly in the Armour-Holston-Lindside general soil map unit. The steep, wooded hillsides in the background are in the Dellrose-Renox-Barfield general soil map unit.

Additional information about the Nation's natural resources is available on the Natural Resources Conservation Service home page on the World Wide Web. The address is http://www.nrcs.usda.gov.

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Issued 2006

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of Clay County, Tennessee

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with
Clay County Board of Commissioners, Clay County Soil Conservation District, Tennessee Department of Agriculture, and Tennessee Agricultural Experiment Station

CLAY COUNTY is located in north-central Tennessee (fig. 1). It is bordered on the north by Clinton, Cumberland, and Monroe Counties, Kentucky. It is bordered on the south by Jackson and Overton Counties, on the west by Macon County, and on the east by Pickett County, Tennessee. Clay County has 166,000 total acres, including 20,700 acres of water. According to the 2000 U.S. Census, Clay County has a population of 7,976 residents. Celina is the county seat.

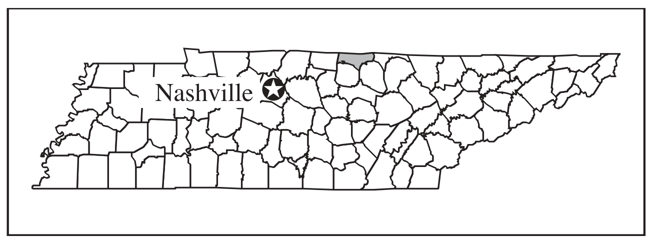

Figure 1.—Location of Clay County in Tennessee.

General Nature of the County

This section gives general information concerning Clay County. It describes history and settlement; natural resources and land use; physiography, relief, and drainage; and climate.

History and Settlement

The area now known as Clay County has been a part of three states and six counties *(12)*. In 1870, Clay County was officially formed from parts of Jackson and Overton Counties. It was named in honor of Henry Clay, who was Secretary of State under President John Quincy Adams *(15)*.

The original inhabitants in the survey area were Cherokee, Chickasaw, Iroquis, and Shawnee Indians. Martin Chartier, a Frenchman, accompanied a hunting party to the survey area in 1691. It is believed that he was the first European to have been to the survey area. Obediah Terrill was the first permanent settler. He arrived about 1770 while traveling with Daniel Boone and others *(12)*. Daniel Boone visited the area several times and named such landmarks as Brimstone Creek, Pigeon Roost, Knob Creek, and Turkey Creek *(3)*.

The first African American community, now known as Free Hill, was started when freed slaves settled in an area just north of Celina. In 1929, the first school was built in this community *(9)*. Both the school and courthouse in Free Hill are listed on the National Register of Historic Places.

In 1863, Federal Troops burned the town of Celina. The town was rebuilt to the east. The new courthouse, built in 1870, is the second oldest courthouse in Tennessee that is still in use *(9, 11)*.

The greatest change in the county's history came in the 1940's when Congress approved the Dale Hollow

Dam project, an effort to control flooding. The dam was completed in 1943. Regular flooding stages of 40 to 50 feet occurred annually. The largest floods occurred in 1826 and 1926 at 59.2 and 57.25 feet, respectively. Floodwaters at these stages are nearly 20 feet above the bank full level. No flood has been recorded above 40 feet since the completion of all the dams in the project *(16)*.

Each year about 3 million visitors come to Dale Hollow Lake and provide substantial revenue to the area. In effect, the residents have traded agricultural production for flood control, electric power, and tourism.

Natural Resources and Land Use

Some of the earliest crops grown in the survey area were flax, corn, cotton, and hemp. One of the first methods of transporting crops was floating flat-bottomed rafts down the rivers. Several dozen logs were tied together and loaded with dried goods, pelts, and crops. Everything was sold at the destination, including the logs of the raft. Timber was also floated down the Cumberland River in this manner. The trades people would walk home on trails, such as the Natchez Trace and Walton Road. Navigating the rough waters was very hazardous in those times. In 1824, Congress passed the Rivers and Harbors Act that commissioned the Army Corps of Engineers to improve the waterways. By the mid 1800’s, there were a dozen steamboats carrying crops down the Cumberland River to markets as far as New Orleans *(16)*.

Clay County at one time held a reputation for corn production. Fertile lands along the flood plains helped to feed the many hogs that were raised in the county around the turn of the last century. Reportedly, the most productive area in the county was the Obey River flood plain. This area was no longer available for farm production after the Dale Hollow project was finished *(10)*.

Many other economic enterprises have also been tried. About 1950, an ice cream plant was built and large acreages of strawberries were grown as supplies for it. Later, cooperatives were formed to market bell peppers, tomatoes, and other vegetable crops *(4)*. In the mid 1990’s, poultry became the second largest industry. Several million chickens are grown in the county each year. Many smaller industries have formed to supply the growers.

There are 13,140 acres of prime farmland in the county. This land is used almost exclusively for farming or as residential areas. The remainder of the acreage in Clay County, however, yields the highest profits for citizens. According to surveys done by the Tennessee Division of Forestry, about 105,500 acres are woodland. About 97.3 percent of this land is privately owned *(13)*. The oak-hickory forest type is dominant with a few mixed maples, pines, and poplars. Almost 10 million board feet of timber is harvested each year *(14)*. High-quality lumber is sold or used locally for furniture. Sawdust, a by-product of this industry, is used in local chicken houses. Bark is ground up and sold as landscaping mulch. Lower quality wood is used to make pallets. A log home manufacturer is also located in the county.

Throughout the history of the county, most residents have relied on a mixture of row cropping, harvesting timber, and raising livestock in order to be self-sufficient. New industries have developed as land use and economic infrastructures have changed.

Physiography, Relief, and Drainage

The relief in Clay County ranges from typically slightly higher than 1,000 feet on the Highland Rim to 520 feet, the lowest elevation in the county, on the Cumberland River as it enters Jackson County. The highest elevation in the county is 1,400 feet on Pilot Knob near the Thompson’s Store community. Several other knobs in the area exceed 1,300 feet. Landscapes on the Highland Rim consist of undulating and rolling ridges and hillsides with slopes of less than 20 percent. Fairview, Oak Grove, Pea Ridge, and areas west of Moss are typical of the Highland Rim. Most areas in the river valleys are also undulating, and slopes rarely exceed 20 percent. The escarpment that separates the Nashville Basin physiographic province from the Highland Rim is steep and highly dissected and contrasts strongly between the upland flats above it and the undulating river bottoms and stream terraces below it.

Many streams and rivers make up the drainage systems that shape the land of Clay County. These streams are arranged in a dendritic pattern that makes up the four watersheds in the county. Two watersheds have impoundments upstream from where they enter the county. The Lake Cumberland watershed drains into the county from the north. It is checked by the Wolf Creek Dam in Russell County, Kentucky. The Obey River watershed is checked by the Dale Hollow Dam located within the county. The only watershed that does not run toward the south is the Barren River watershed that drains the northwestern part of the county. Streams such as Line Creek and Trace Creek are a part of this system and drain into Monroe

County. The Cordell Hull watershed receives all runoff from both the Obey and Cumberland Rivers in addition to all smaller tributaries that empty to the south *(23)*.

Dams, levees, and other flood prevention measures have reduced the flood potential on the Cumberland River flood plain. Tributaries, however, are still susceptible to flash flooding. On the adjacent steep landscapes are areas comprised mainly of Garmon and Newbern soils, which have high or very high rates of runoff. Over 40 percent of the land area in the county is represented by these soils. These soils have a limited depth over shale bedrock. Peak discharge from the smaller creeks is achieved shortly after periods of heavy rainfall. Ocana and Skidmore soils are the typical soils on these narrow flood plains.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Livingston, Tennessee, in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 38.0 degrees F and the average daily minimum temperature is 27.5 degrees. The lowest temperature on record, which occurred at Livingston on January 21, 1985, was -25 degrees. In summer, the average temperature is 74.1 degrees and the average daily maximum temperature is 86.1 degrees. The highest temperature, which occurred at Livingston on July 12, 1980, was 108 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units”. During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 52.28 inches. Of this, about 29.54 inches, or about 57 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.43 inches at Livingston on December 25, 1987. Thunderstorms occur on about 53 days each year, and most occur between May and August.

The average seasonal snowfall is 11.7 inches. The greatest snow depth at any one time during the period of record was 9 inches, recorded on January 20, 1978. On an average, 5 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 8.0 inches, recorded on November 2, 1966.

The average relative humidity in mid-afternoon is about 57 percent. Humidity is higher at night, and the average at dawn is about 84 percent. The sun shines 64 percent of the time in summer and 43 percent in winter. The prevailing wind is from the south. Average windspeed is highest, around 10 miles per hour, from December to April.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color,

texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

In areas along the borders of Clay County, the names of the general soil map units do not match those of adjoining counties. These discrepancies result from differences in detail of mapping, changes in soil classification, and different proportions of the same soils in adjoining counties.

The land areas in Clay County make up approximately 87.3 percent of the total acreage. The remaining percentage consists of the Dale Hollow Reservoir.

1. Hawthorne

Moderately deep, rolling to very steep, somewhat excessively drained soils that formed in residuum from cherty limestone and siltstone

Setting

Physiographic subprovince: Highland Rim
Slope range: 5 to 70 percent

Extent and Composition

Percent of the survey area: 8.1
Hawthorne soils—74 percent
Minor soils (including Barfield, Frederick, Ocana, Skidmore, and Sugargrove)—26 percent

Soil Properties and Qualities

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Position on landform: Ridges and hillsides
Parent material: Residuum from cherty limestone and siltstone
Surface textural class: Gravelly silt loam
Slope range: 5 to 70 percent

Use and Management

Major uses: Woodland
Management concerns: Slope, rock fragments, and low available water capacity
Management measures and considerations:
- Equipment use is limited on the steeper slopes.
- Selecting tree species that are drought tolerant and planting on east- and north-facing slopes are recommended practices.

2. Sugargrove-Hawthorne

Moderately deep and deep, undulating to very steep, well drained and somewhat excessively drained soils that formed in residuum from cherty limestone and siltstone

Setting

Physiographic subprovince: Highland Rim
Slope range: 2 to 70 percent

Extent and Composition

Percent of the survey area: 10.2
Sugargrove soils—39 percent
Hawthorne soils—26 percent
Minor soils (including Humphreys, Monongahela, Mountview, and Ocana)—35 percent

Soil Properties and Qualities

Sugargrove

Depth class: Moderately deep and deep
Drainage class: Well drained

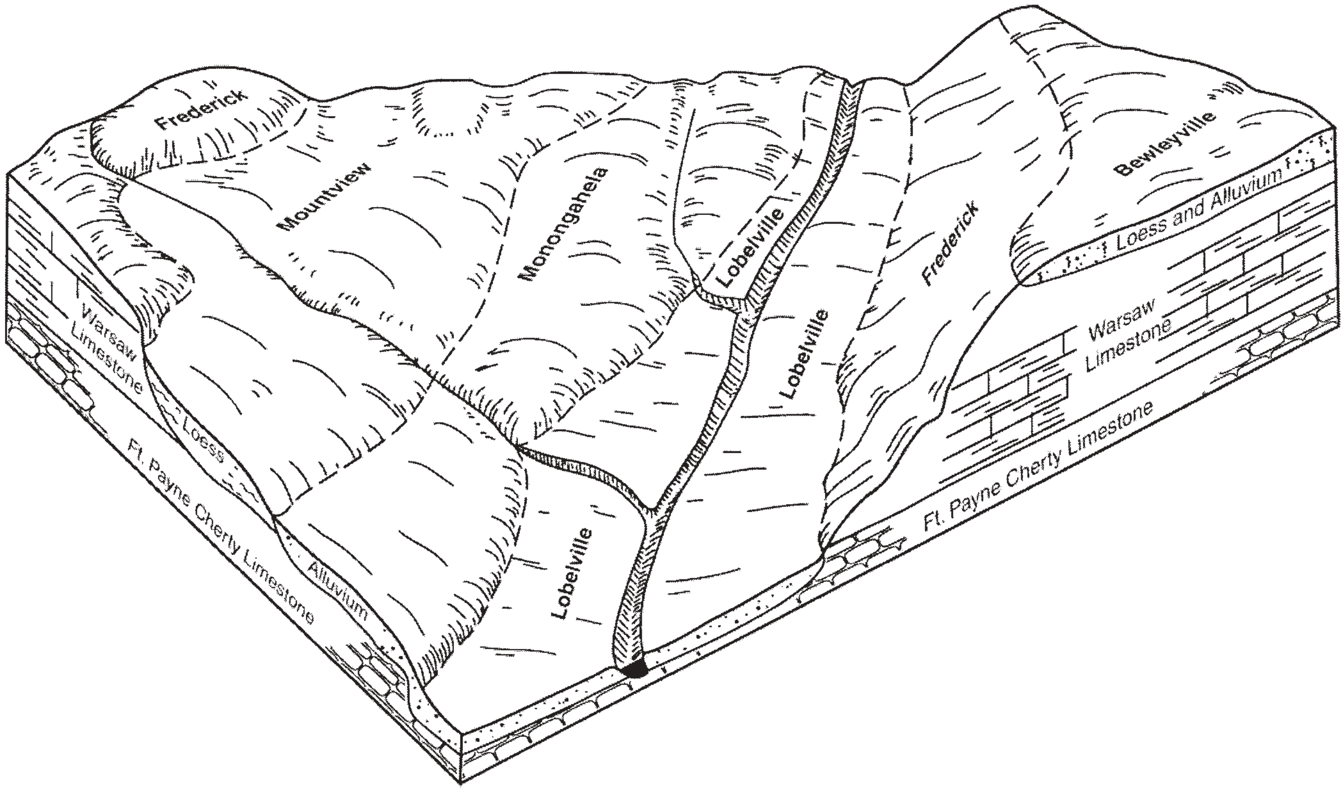

Figure 2.—The relationship between soils and landscape in the Frederick-Mountview-Bewleyville general soil map unit.

Position on landform: Ridgetops and hillsides
Parent material: Residuum from cherty limestone and siltstone
Surface textural class: Gravelly silt loam
Slope range: 2 to 20 percent

Hawthorne

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Position on landform: Ridgetops and hillsides
Parent material: Residuum from cherty limestone
Surface textural class: Gravelly silt loam
Slope range: 5 to 70 percent

Use and Management

Major uses: Pasture and woodland
Management concerns: Rock fragments, low available water capacity, and slope
Management measures and considerations:
- On the lesser slopes, using conservation practices in pasture management and in cultivated areas reduces the hazard of erosion.
- Some steeper areas are suited to permanent grass-legume pasture.
- Equipment use is limited on the steeper slopes.
- Selecting tree species that are drought tolerant and planting on east- and north-facing slopes are recommended practices.

3. Frederick-Mountview-Bewleyville

Very deep, undulating to steep, well drained and moderately well drained soils that formed in alluvium, loess, and limestone residuum (fig. 2)

Setting

Physiographic subprovince: Highland Rim
Slope range: 2 to 40 percent

Extent and Composition

Percent of the survey area: 13.4
Frederick soils—26 percent
Mountview soils—22 percent
Bewleyville soils—12 percent
Minor soils (including Dickson, Christian, Lobelville, and Monongahela)—40 percent

Soil Properties and Qualities

Frederick

Depth class: Very deep
Drainage class: Well drained
Position on landform: Ridgetops and hillsides
Parent material: Limestone residuum
Surface textural class: Loam
Slope range: 5 to 40 percent

Mountview

Depth class: Very deep
Drainage class: Well drained and moderately well drained
Position on landform: Broad upland flats and divides
Parent material: Loess over limestone residuum
Surface textural class: Silt loam
Slope range: 2 to 12 percent

Bewleyville

Depth class: Very deep
Drainage class: Well drained
Position on landform: Broad upland flats and divides
Parent material: Loess and alluvium
Surface textural class: Silt loam
Slope range: 2 to 12 percent

Use and Management

Major uses: Pasture and cropland
Management concerns: Erosion on cropland
Management measures and considerations:
• Minimum tillage, no-till planting, farming on the contour, grassed waterways, and winter cover crops help to reduce the hazard of erosion on cropland.

4. Frederick-Christian-Minvale

Very deep and deep, rolling to steep, well drained soils that formed in colluvium and residuum from cherty limestone

Setting

Physiographic subprovince: Highland Rim
Slope range: 5 to 40 percent

Extent and Composition

Percent of the survey area: 5.1
Frederick soils—21 percent
Christian soils—20 percent
Minvale soils—11 percent
Minor soils (including Bewleyville, Caneyville, Dewey, Faywood, and Mountview)—48 percent

Soil Properties and Qualities

Frederick

Depth class: Very deep
Drainage class: Well drained
Position on landform: Ridgetops and hillsides
Parent material: Limestone residuum
Surface textural class: Loam
Slope range: 5 to 40 percent

Christian

Depth class: Deep
Drainage class: Well drained
Position on landform: Ridgetops and hillsides
Parent material: Limestone residuum
Surface textural class: Loam
Slope range: 5 to 40 percent

Minvale

Depth class: Very deep
Drainage class: Well drained
Position on landform: Footslopes
Parent material: Colluvium
Surface textural class: Gravelly loam
Slope range: 5 to 40 percent

Use and Management

Major uses: Pasture and cropland
Management concerns: Erosion on cropland
Management measures and considerations:
• Minimum tillage, no-till planting, farming on the contour, grassed waterways, and winter cover crops help to reduce the hazard of erosion on cropland.

5. Armour-Holston-Lindside

Very deep, nearly level to rolling, well drained and moderately well drained soils that formed in alluvium from the Cumberland River system (fig. 3)

Setting

Physiographic subprovince: Nashville Basin
Slope range: 0 to 12 percent

Extent and Composition

Percent of the survey area: 5.1
Armour soils—17 percent
Holston soils—12 percent
Lindside soils—11 percent
Minor soils (including Byler, Dellrose, Huntington, Melvin, Renox, and Staser)—60 percent

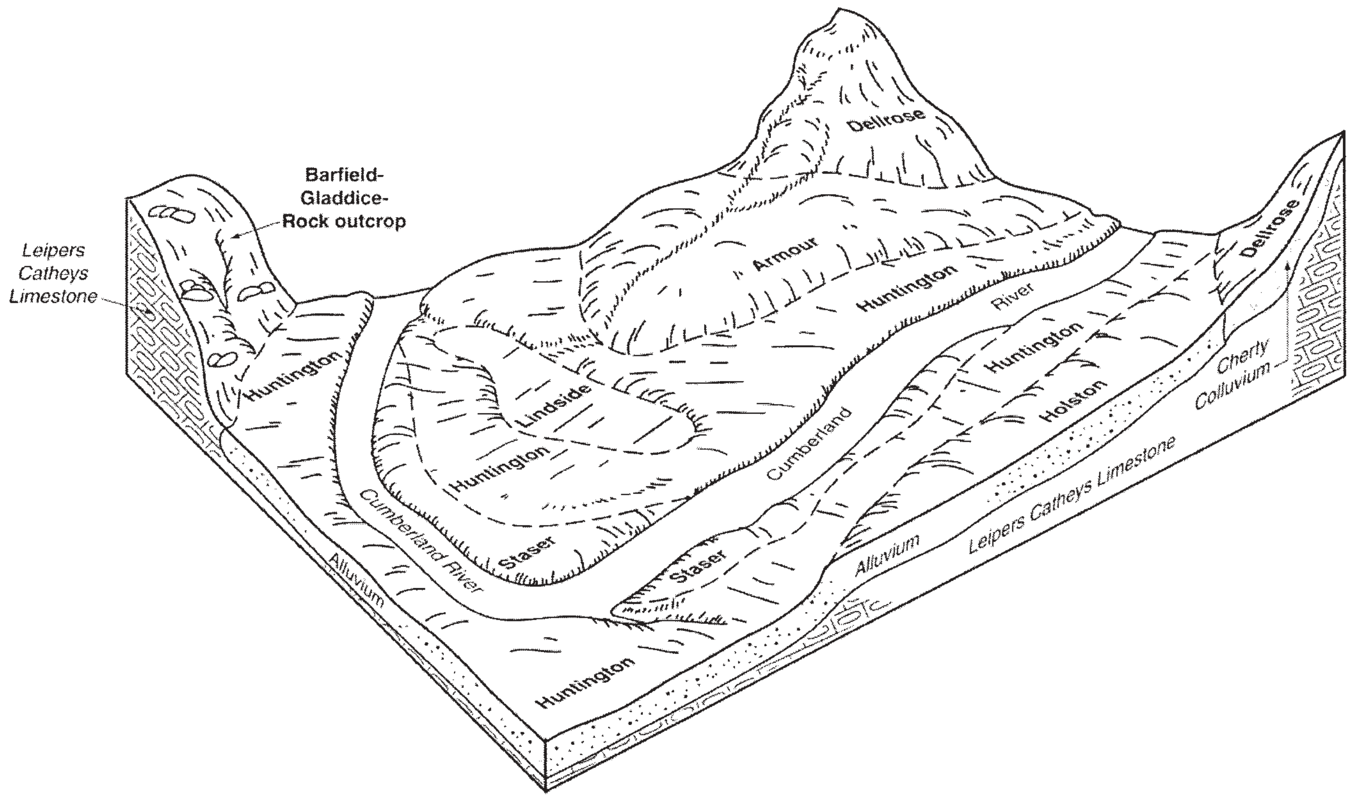

Figure 3.—The relationship between soils and landscape in the Armour-Holston-Lindside general soil map unit.

Soil Properties and Qualities

Armour

Depth class: Very deep
Drainage class: Well drained
Position on landform: River terraces and stream terraces
Parent material: Alluvium
Surface textural class: Silt loam
Slope range: 2 to 12 percent

Holston

Depth class: Very deep
Drainage class: Well drained
Position on landform: River terraces
Parent material: Alluvium
Surface textural class: Loam
Slope range: 2 to 12 percent

Lindside

Depth class: Very deep
Drainage class: Moderately well drained
Position on landform: Flood plains
Parent material: Alluvium
Surface textural class: Silt loam
Slope range: 0 to 2 percent

Use and Management

Major uses: Pasture, cropland, and residential development
Management concerns: Erosion and flooding
Management measures and considerations:
• Flood-control structures, minimum tillage, no-till planting, farming on the contour, and grassed waterways help to control erosion.

6. Dellrose-Renox-Barfield

Shallow to very deep, undulating to very steep, well drained soils that formed in colluvium and residuum from phosphatic limestone (fig. 4)

Setting

Physiographic subprovince: Nashville Basin
Slope range: 2 to 70 percent

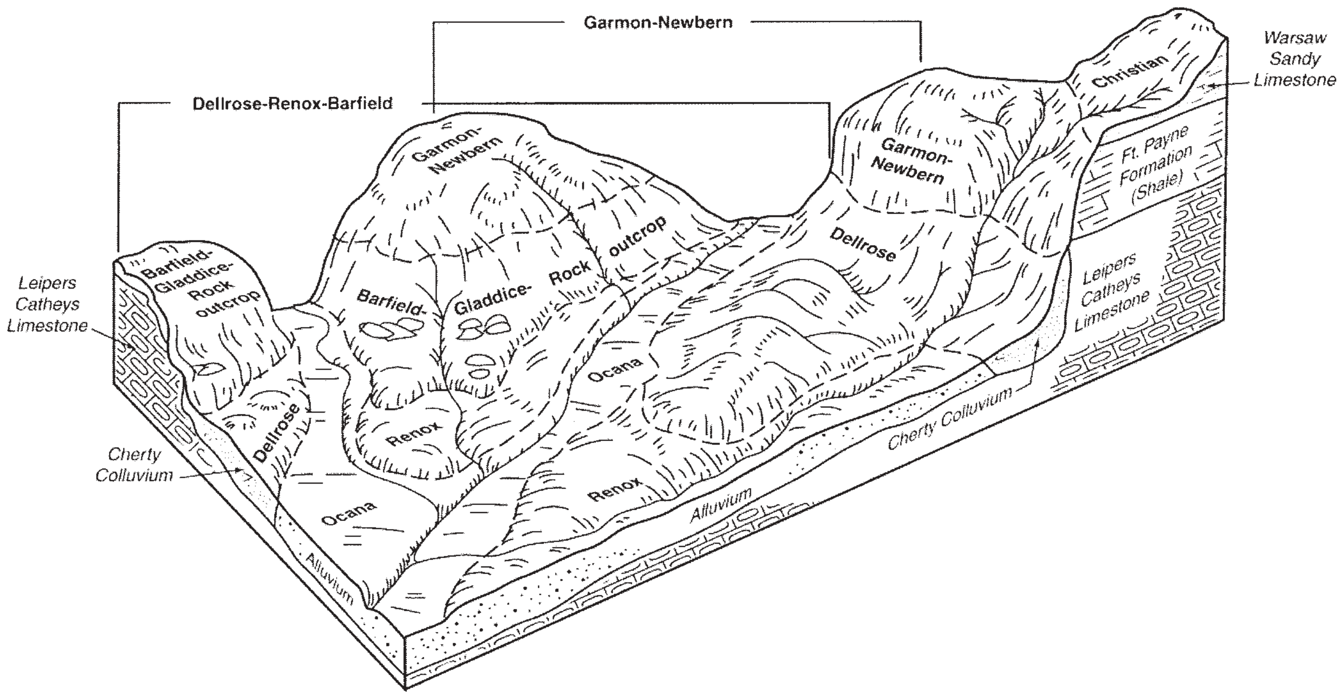

Figure 4.—The relationship between soils and landscape in the Dellrose-Renox-Barfield general soil map unit and in the Garmon-Newbern general soil map unit.

Extent and Composition

Percent of the survey area: 3.6
- Dellrose soils—44 percent
- Renox soils—13 percent
- Barfield soils—12 percent
- Minor soils (including Gladdice, Humphreys, Mimosa, Ocana, and Skidmore)—31 percent

Soil Properties and Qualities

Dellrose

Depth class: Very deep
Drainage class: Well drained
Position on landform: Footslopes and hillsides
Parent material: Colluvium
Surface textural class: Gravelly silt loam
Slope range: 12 to 60 percent

Renox

Depth class: Very deep
Drainage class: Well drained
Position on landform: Stream terraces and alluvial fans
Parent material: Alluvium and colluvium
Surface textural class: Silt loam
Slope range: 2 to 12 percent

Barfield

Depth class: Shallow
Drainage class: Well drained
Position on landform: Hillsides
Parent material: Limestone residuum
Surface textural class: Silty clay loam
Slope range: 20 to 70 percent

Use and Management

Major uses: Pasture and woodland
Management concerns: Slope and areas of rock outcrop
Management measures and considerations:
- Equipment use is limited on the steep slopes.

7. Christian-Sengtown-Etowah

Deep and very deep, undulating to steep, well drained soils that formed in residuum from cherty limestone and alluvium

Setting

Physiographic subprovince: Highland Rim
Slope range: 2 to 40 percent

Extent and Composition

Percent of the survey area: 5.1 percent
Christian soils—50 percent
Sengtown soils—7 percent
Etowah soils—6 percent
Minor soils (including Caneyville, Minvale, and Waynesboro)—37 percent

Soil Properties and Qualities

Christian

Depth class: Deep
Drainage class: Well drained
Position on landform: Ridgetops and hillsides
Parent material: Limestone residuum
Surface textural class: Loam
Slope range: 5 to 40 percent

Sengtown

Depth class: Very deep
Drainage class: Well drained
Position on landform: Ridgetops and hillsides
Parent material: Limestone residuum
Surface textural class: Cobbly loam
Slope range: 5 to 40 percent

Etowah

Depth class: Very deep
Drainage class: Well drained
Position on landform: Broad undulating high terraces
Parent material: Alluvium
Surface textural class: Loam
Slope range: 2 to 12 percent

Use and Management

Major uses: Pasture and cropland
Management concerns: Erosion on cropland
Management measures and considerations:
• Minimum tillage, no-till planting, farming on the contour, grassed waterways, and winter cover crops help to reduce the hazard of erosion on cropland.

8. Garmon-Newbern

Moderately deep and shallow, rolling to very steep, well drained and somewhat excessively drained soils that formed in residuum from calcareous shale (fig. 4)

Setting

Physiographic subprovince: Highland Rim
Slope range: 5 to 80 percent

Extent and Composition

Percent of the survey area: 36.7
Garmon soils—48 percent
Newbern soils—29 percent
Minor soils (including Christian, Dellrose, and Renox)—23 percent

Soil Properties and Qualities

Garmon

Depth class: Moderately deep
Drainage class: Well drained
Position on landform: Escarpment
Parent material: Shale residuum
Surface textural class: Channery silt loam
Slope range: 5 to 80 percent

Newbern

Depth class: Shallow
Drainage class: Somewhat excessively drained
Position on landform: Escarpment
Parent material: Shale residuum
Surface textural class: Channery silt loam
Slope range: 5 to 80 percent

Use and Management

Major uses: Woodland
Management concerns: Slope, rock fragments, and low available water capacity
Management measures and considerations:
• Equipment use is limited on the steeper slopes.
• Selecting tree species that are drought tolerant and planting on east- and north-facing slopes are recommended practices.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called non-contrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Huntington silt loam, rarely flooded, is a phase of the Huntington series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use

and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Dellrose and Mimosa soils, 20 to 60 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. The Rock outcrop part of Talbott-Rock outcrop complex, 5 to 20 percent slopes, is an example. Some areas that are too small to be delineated are shown on the maps with special symbols.

In some areas along the borders of Clay County, the boundaries of the soil map units and the soil names do not match those of adjoining counties. These discrepancies result from differences in the scale and detail of mapping and changes in soil classification.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

AmB—Armour silt loam, 2 to 5 percent slopes

Setting

Landscape position: Cumberland River terraces
Size of areas: 5 to 147 acres
Parent material: Alluvium

Composition

Armour soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 14 inches—dark brown silt loam

Subsoil:
14 to 70 inches—strong brown silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Byler soils on similar landscapes
- Soils in drainageways that are subject to flooding

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forestry management.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

AmC2—Armour silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Cumberland River terraces
Size of areas: 5 to 248 acres
Parent material: Alluvium

Composition

Armour soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 70 inches—strong brown silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Byler soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

Ar—Arrington silt loam, occasionally flooded

Setting

Landscape position: Cumberland River flood plain
Size of areas: 5 to 14 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Arrington soil and similar inclusions: 95 percent

Typical Profile

Surface layer:
0 to 37 inches—dark brown silt loam

Subsoil:
37 to 55 inches—dark yellowish brown silty clay loam

Substratum:
55 to 80 inches—yellowish brown silt loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High or very high, 7 to 9 inches
Soil reaction: Slightly acid
Depth to bedrock: More than 60 inches
Flooding: Occasional for very brief periods from December through March

Contrasting Inclusions

- Armour and Holston soils in the higher areas
- Lindside and Melvin soils in the lower areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

BaF—Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes

Setting

Landscape position: Hillsides
Size of areas: 5 to 350 acres
Parent material: Residuum from phosphatic limestone

Composition

Barfield and Gladdice soils and similar inclusions: 75 percent
Rock outcrop: 20 percent
Minor soils: 5 percent

Typical Profile

Barfield

Surface layer:
0 to 7 inches—dark brown silty clay loam

Subsoil:
7 to 14 inches—dark yellowish brown clay

Bedrock:
14 inches—hard phosphatic limestone bedrock

Gladdice

Surface layer:
0 to 9 inches—brown silty clay loam

Subsoil:
9 to 28 inches—yellowish brown clay

Bedrock:
28 inches—hard phosphatic limestone bedrock

Rock outcrop

Rock outcrop consists of phosphatic limestone bedrock rising 1 to 4 feet above the surface.

Properties and Qualities of the Barfield and Gladdice Soils

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Barfield—very low, 1 to 2 inches; Gladdice—low, 2 to 4 inches
Soil reaction: Barfield—slightly acid to slightly alkaline; Gladdice—moderately acid to slightly alkaline
Depth to bedrock: Barfield—8 to 20 inches; Gladdice—20 to 40 inches

Contrasting Inclusions

• Dellrose soils on similar landscapes

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• The shallow depth to bedrock severely reduces the amount of water available to plants.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
• Rock outcrops limit most management practices.
• The slope limits most management practices and the use of farm equipment.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Constructing roads along the contour reduces the severe hazard of erosion.
• Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
• Equipment use is limited because of the slope.
• Harvesting operations are difficult because of the rock outcrops.
• The available water capacity is restricted because of the limited soil depth.
• Lower growth rates limit the adaptability of desirable species.
• Because of the depth to bedrock, the rooting depth is restricted and trees are susceptible to windthrow.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope severely limits road construction and commercial and residential uses.
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• These soils are not suitable for septic systems because of the slow or very slow permeability.
• The depth to bedrock limits installation.

Interpretive Groups

Land capability classification: 7s

BeB2—Bewleyville silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Stream terraces
Size of areas: 5 to 66 acres
Parent material: Alluvium and loess

Composition

Bewleyville soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—brown and strong brown silt loam

Subsoil:
9 to 30 inches—strong brown silt loam
30 to 57 inches—yellowish red silty clay loam
57 to 77 inches—red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High or very high, 7 to 9 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Dickson soils on similar landscapes
• Frederick soils on hillsides

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and rotating grazing increase the quality and quantity of forage.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forestry management.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited

Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

BeC2—Bewleyville silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Stream terraces
Size of areas: 5 to 95 acres
Parent material: Alluvium and loess

Composition

Bewleyville soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—brown and strong brown silt loam

Subsoil:
9 to 30 inches—strong brown silt loam
30 to 57 inches—yellowish red silty clay loam
57 to 77 inches—red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High or very high, 7 to 9 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Frederick soils on hillsides

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

ByB—Byler silt loam, 2 to 5 percent slopes

Setting

Landscape position: Cumberland River terraces
Size of areas: 5 to 65 acres
Parent material: Alluvium over residuum

Composition

Byler soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 20 inches—yellowish brown silt loam
20 to 31 inches—brownish yellow silt loam; firm fragipan
31 to 82 inches—light yellowish brown and strong brown silty clay loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow or very slow within the fragipan
Available water capacity: Low or moderate, 3 to 6 inches
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 2.0 feet from December through April

Contrasting Inclusions

- Armour soils on similar landscapes
- Soils in drainageways that are subject to flooding

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- The limited depth to the fragipan reduces the amount of water available to plants.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forestry management.

Dwellings

Suitability for dwellings without basements: Suited
Suitability for dwellings with basements: Poorly suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.
- Subsurface drainageways and landshaping help to remove excess water.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
- Curtain drains and landscape designs may be needed to remove excess water.

Interpretive Groups

Land capability classification: 2e

CaD2—Caneyville-Lonewood complex, 6 to 25 percent slopes, eroded, rocky

Setting

Landscape position: Hillsides along the Kentucky State line
Size of areas: 5 to 390 acres
Slope range: 6 to 25 percent
Parent material: Residuum from sandy limestone and siltstone

Composition

Caneyville and Lonewood soils and similar inclusions: 75 percent

Typical Profile

Caneyville

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 19 inches—strong brown loam
19 to 36 inches—yellowish red clay and clay loam

Bedrock:
36 inches—hard limestone bedrock

Lonewood

Surface layer:
0 to 4 inches—dark grayish brown loam

Subsoil:
4 to 9 inches—yellowish brown loam
9 to 29 inches—dark yellowish brown loam
29 to 45 inches—strong brown clay loam
45 to 61 inches—yellowish red loam

Soil Properties and Qualities

Drainage class: Well drained

Permeability: Caneyville—slow or very slow; Lonewood—moderate
Available water capacity: Caneyville—moderate or high, 4 to 7 inches; Lonewood—high, 6 to 8 inches
Soil reaction: Caneyville—strongly acid to neutral; Lonewood—very strongly acid or strongly acid
Depth to bedrock: Caneyville—20 to 40 inches; Lonewood—40 to 72 inches

Contrasting Inclusions

- Garmon and Newbern soils on the lower ridges
- Sullivan soils in depressions
- Soils that have clay texture in the lower part of the subsoil

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Long rotations into grass and legumes are needed to reduce the hazard of erosion.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.
- The slope limits some management practices.

Woodland

Suitability: Suited
Management measures and considerations:
- Water turnouts and diversions are needed on roads and landings to prevent erosion.
- The slope may limit the use of some equipment.

Dwellings

Suitability: Suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.
- Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Caneyville—unsuited; Lonewood—suited
Management measures and considerations:
- The Caneyville soil is not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to locate areas of the more suitable Lonewood soil.

Interpretive Groups

Land capability classification: 6s

CrC2—Christian loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridgetops
Size of areas: 5 to 70 acres
Slope range: 5 to 12 percent
Parent material: Residuum from limestone, sandstone, and siltstone

Composition

Christian soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown and yellowish brown loam

Subsoil:
8 to 18 inches—strong brown clay loam
18 to 48 inches—strong brown clay
48 to 57 inches—strong brown extremely channery clay loam

Substratum:
57 to 62 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Moderate or high, 4 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: 40 to 72 inches

Contrasting Inclusions

- Etowah soils on the lower landscapes

• Soils that have bedrock at a depth of less than 40 inches

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• This soil is not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine suitable sites.

Interpretive Groups

Land capability classification: 3e

CrD2—Christian loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 110 acres
Slope range: 12 to 20 percent
Parent material: Residuum from limestone, sandstone, and siltstone

Composition

Christian soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown and yellowish brown loam

Subsoil:
8 to 18 inches—strong brown clay loam
18 to 48 inches—strong brown clay
48 to 57 inches—strong brown extremely channery clay loam

Substratum:
57 to 62 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Moderate or high, 4 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: 40 to 72 inches

Contrasting Inclusions

• Etowah soils on the lower landscapes
• Soils that have bedrock at a depth of less than 40 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• The slope limits some management practices.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• The slope may limit the use of some equipment.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Septic lines may not function properly because of the slope.
• This soil is not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine suitable sites.

Interpretive Groups

Land capability classification: 4e

CrE2—Christian loam, 20 to 40 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 220 acres
Slope range: 20 to 40 percent
Parent material: Residuum from limestone, sandstone, and siltstone

Composition

Christian soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown and yellowish brown loam

Subsoil:
8 to 18 inches—strong brown clay loam
18 to 48 inches—strong brown clay
48 to 57 inches—strong brown extremely channery clay loam

Substratum:
57 to 62 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Moderate or high, 2 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: 40 to 72 inches

Contrasting Inclusions

• Etowah soils on the lower landscapes
• Soils that have bedrock at a depth of less than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the slope, hazard of erosion, and other soil properties, this soil should not be used as cropland.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• The slope is a limitation affecting most management practices.
• The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Suited
Management measures and considerations:
• Constructing roads along the contour reduces the severe hazard of erosion.
• Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
• The slope may limit the use of some equipment.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope severely limits road designs and commercial and residential uses.

Septic tank absorption fields

Suitability: Unsuited

Management measures and considerations:
• Septic lines may not function properly because of the slope.
• This soil is not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine suitable sites.

Interpretive Groups

Land capability classification: 6e

CwD—Christian-Faywood complex, 12 to 20 percent slopes, rocky

Setting

Landscape position: Hillsides
Size of areas: 5 to 95 acres
Slope range: 12 to 20 percent
Parent material: Residuum from limestone, siltstone, and calcareous shale

Composition

Christian and Faywood soils and similar inclusions: 90 percent

Typical Profile

Christian

Surface layer:
0 to 8 inches—brown and yellowish brown loam

Subsoil:
8 to 18 inches—strong brown clay loam
18 to 48 inches—strong brown clay
48 to 57 inches—strong brown extremely channery clay loam

Substratum:
57 to 62 inches—soft weathered siltstone bedrock

Faywood

Surface layer:
0 to 1 inch—very dark grayish brown silt loam

Subsoil:
1 to 8 inches—yellowish brown silty clay loam
8 to 25 inches—yellowish brown clay

Bedrock:
25 inches—siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Christian—moderate or high, 2 to 8 inches; Faywood—low, 2 to 4 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: Christian—40 to 72 inches; Faywood—20 to 40 inches

Contrasting Inclusions

• Etowah soils on the lower landscapes
• Sullivan soils in depressions

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• The limited depth to bedrock restricts the amount of water available to plants.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
• Rock outcrops limit some management practices.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• The slope may limit the use of some equipment.
• Woodland management and logging operations are difficult because of rock outcrops.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Septic lines may not function properly because of the slope.
• These soils are not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine suitable sites.

Interpretive Groups

Land capability classification: 6e

CwE—Christian-Faywood complex, 20 to 40 percent slopes, very rocky

Setting

Landscape position: Hillsides

Size of areas: 5 to 250 acres
Slope range: 20 to 40 percent
Parent material: Residuum from limestone, siltstone, and calcareous shale

Composition

Christian and Faywood soils and similar inclusions: 90 percent

Typical Profile

Christian

Surface layer:
0 to 8 inches—brown and yellowish brown loam

Subsoil:
8 to 18 inches—strong brown clay loam
18 to 48 inches—strong brown clay
48 to 57 inches—strong brown extremely channery clay loam

Substratum:
57 to 62 inches—soft weathered siltstone bedrock

Faywood

Surface layer:
0 to 1 inch—very dark grayish brown silt loam

Subsoil:
1 to 8 inches—yellowish brown silty clay loam
8 to 25 inches—yellowish brown clay

Bedrock:
25 inches—siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Christian—moderate or high, 2 to 8 inches; Faywood—low, 2 to 4 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: Christian—more than 40 inches; Faywood—20 to 40 inches

Contrasting Inclusions

- Etowah soils on the lower landscapes
- Sullivan soils in depressions

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- Because of the slope, hazard of erosion, and rockiness, these soils should not be used as cropland.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
- The slope is a limitation affecting most management practices.
- The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Poorly suited
Management measures and considerations:
- Constructing roads along the contour reduces the severe erosion hazard.
- Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
- Woodland management and logging operations are difficult because of the rock outcrops.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- Excavations for buildings and roads may expose bedrock.
- The slope severely limits road designs and commercial and residential uses.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- Septic lines may not function properly because of the slope.
- These soils are not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine suitable sites.

Interpretive Groups

Land capability classification: 7e

DeD2—Dellrose gravelly silt loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 30 acres
Slope range: 12 to 20 percent
Parent material: Colluvium or colluvium over residuum

Composition

Dellrose soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown gravelly silt loam

Subsoil:
5 to 22 inches—dark brown gravelly silt loam
22 to 66 inches—strong brown gravelly silty clay loam
66 to 80 inches—strong brown clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate in the upper part of the profile and slow or very slow in the lower part of the subsoil
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Moderately acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Mimosa soils in convex areas

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, grassed waterways, farming on the contour, and winter cover crops are essential in managing cropland.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• The slope limits some management practices.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• The slope may limit the use of some equipment.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.
• Soil slippage is a concern when homesites are excavated into hillsides.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Septic lines may not function properly because of the slope.

Interpretive Groups

Land capability classification: 4e

DeE—Dellrose gravelly silt loam, 20 to 45 percent slopes

Setting

Landscape position: Hillsides
Size of areas: 5 to 250 acres
Slope range: 20 to 45 percent
Parent material: Colluvium or colluvium over residuum

Composition

Dellrose soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—dark yellowish brown gravelly silt loam

Subsoil:
7 to 22 inches—dark brown gravelly silt loam
22 to 66 inches—strong brown gravelly silty clay loam
66 to 80 inches—strong brown clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate in the upper part of the profile and slow or very slow in the lower part of the subsoil
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Moderately acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Mimosa soils in convex areas

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the slope, hazard of erosion hazard, and other soil properties, this soil should not be used as cropland.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• The slope is a limitation affecting most management practices.
• The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Suited
Management measures and considerations:
• Constructing roads along the contour reduces the severe hazard of erosion.
• Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
• Equipment use is limited because of the slope.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Unless there is costly site preparation, the slope greatly limits most commercial and residential uses.
• Soil slippage is a concern when homesites are excavated into hillsides.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Areas of less sloping soils should be selected. An onsite investigation is needed.

Interpretive Groups

Land capability classification: 6e

DeF—Dellrose and Mimosa soils, 20 to 60 percent slopes

Setting

Landscape position: Hillsides
Size of areas: 5 to 100 acres
Slope range: 20 to 60 percent
Parent material: Dellrose—cherty colluvium; Mimosa—limestone residuum

Composition

Dellrose and Mimosa soils and similar inclusions: 95 percent

Typical Profile

Dellrose

Surface layer:
0 to 7 inches—dark yellowish brown gravelly silt loam

Subsoil:
7 to 22 inches—dark brown gravelly silt loam
22 to 66 inches—strong brown gravelly silty clay loam
66 to 80 inches—strong brown clay

Mimosa

Surface layer:
0 to 11 inches—yellowish brown silt loam

Subsoil:
11 to 51 inches—yellowish brown clay

Bedrock:
51 inches—phosphatic limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Dellrose—moderately rapid; Mimosa—slow or very slow
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Dellrose—moderately acid or strongly acid; Mimosa—moderately acid to very strongly acid
Depth to bedrock: Dellrose—more than 60 inches; Mimosa—40 to 60 inches

Contrasting Inclusions

• Soils that have bedrock at a depth of less than 40 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the slope, severe hazard of erosion, and other soil properties, these soils should not be used as cropland.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• The slope is a limitation affecting most management practices.
• The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Poorly suited

Management measures and considerations:
• Constructing roads along the contour reduces the severe hazard of erosion.
• Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
• Equipment use is limited because of the slope.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope severely limits road designs and commercial and residential uses.
• Soil slippage is a concern when homesites are excavated into hillsides.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Areas of less sloping soils should be selected. An onsite investigation is needed.

Interpretive Groups

Land capability classification: 7e

DfC2—Dewey silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridgetops
Size of areas: 5 to 138 acres
Slope range: 5 to 12 percent
Parent material: Old alluvium and residuum

Composition

Dewey soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—brown silt loam

Subsoil:
7 to 14 inches—yellowish red silty clay loam
14 to 70 inches—red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Strongly acid or very strongly acid, except in limed areas
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Mountview and Bewleyville soils in concave areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, seeding to a cover crop, and using other erosion-control practices help to reduce the hazard of erosion.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Rotating grazing, mowing and clipping, and fertilizing maintain the quality and quality of forage.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Suited
Management measures and considerations:
• Dwellings should be designed so that they conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Increasing the size of the septic tank absorption area helps to compensate for the slower permeability.

Interpretive Groups

Land capability classification: 3e

DkB2—Dickson silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Concave and undulating divides
Size of areas: 5 to 40 acres
Slope range: 2 to 5 percent
Parent material: Loess over residuum or alluvium

Composition

Dickson soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 23 inches—yellowish brown and light yellowish brown silt loam
23 to 38 inches—light yellowish brown silt loam; very firm fragipan
38 to 79 inches—red clay

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow or very slow within the fragipan
Available water capacity: Moderate, 4 to 5 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 2.5 feet from December through April

Contrasting Inclusions

- Frederick soils on hillsides
- Mountview soils on similar landscapes

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- The limited depth to the fragipan reduces the amount of water available to plants.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forestry management.

Dwellings

Suitability for dwellings without basements: Suited
Suitability for dwellings with basements: Poorly suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.
- Subsurface drainageways and landshaping help to remove excess water.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
- Curtain drains and landscape designs may be needed to remove excess water.

Interpretive Groups

Land capability classification: 2e

EwB—Etowah loam, 2 to 5 percent slopes

Setting

Landscape position: Stream terraces
Size of areas: 5 to 12 acres
Parent material: Alluvium

Composition

Etowah soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown loam

Subsoil:
8 to 20 inches—strong brown clay loam
20 to 72 inches—yellowish red clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Christian soils on hillsides
- Sullivan soils in depressions

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forestry management.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

EwC2—Etowah loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Stream terraces
Size of areas: 5 to 65 acres
Parent material: Alluvium

Composition

Etowah soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—brown loam

Subsoil:
5 to 20 inches—strong brown clay loam
20 to 72 inches—yellowish red clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Christian soils on hillsides
• Sullivan soils in depressions

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Suited

Management measures and considerations:
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

FeC2—Frederick loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Rolling ridgetops
Size of areas: 5 to 62 acres
Parent material: Residuum from limestone and siltstone

Composition

Frederick soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 10 inches—light brown loam
10 to 66 inches—red and yellowish red clay
66 to 84 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Bewleyville and Mountview soils on similar landscapes
• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
• Filter field trench walls may become smeared and sealed off if the system is constructed while the soil is wet.

Interpretive Groups

Land capability classification: 3e

FeD2—Frederick loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Ridges and hills

Size of areas: 5 to 325 acres
Slope range: 12 to 20 percent
Parent material: Residuum from limestone and siltstone

Composition

Frederick soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 10 inches—light brown loam
10 to 66 inches—red and yellowish red clay
66 to 84 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Bewleyville and Mountview soils in concave areas
- Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Long rotations into grass and legumes are needed to reduce the hazard of erosion.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- The slope limits some management practices.
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
- The slope may limit the use of some equipment.
- Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.
- Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
- Filter field trench walls may become smeared and sealed off if the system is constructed while the soil is wet.

Interpretive Groups

Land capability classification: 4e

FeE2—Frederick loam, 20 to 40 percent slopes, eroded

Setting

Landscape position: Ridges and hills
Size of areas: 5 to 150 acres
Parent material: Residuum from limestone and siltstone

Composition

Frederick soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 10 inches—light brown loam
10 to 66 inches—red and yellowish red clay
66 to 84 inches—yellowish red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately slow
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Minvale soils on similar landscapes
- Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- Because of the slope, hazard of erosion, and other soil properties, this soil should not be used as cropland.

Pasture and hay

Suitability for pasture: Suited
Suitability for hay: Poorly suited
Management measures and considerations:
- The slope is a limitation affecting most management practices.
- The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Suited
Management measures and considerations:
- Constructing roads along the contour reduces the severe hazard of erosion.
- Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
- The slope may limit the use of some equipment.
- Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- Unless there is costly site preparation, the slope greatly limits most commercial and residential uses.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- Areas of less sloping soils should be selected. An onsite investigation is needed.

Interpretive Groups

Land capability classification: 6e

GnD—Garmon-Newbern complex, 5 to 20 percent slopes

Setting

Landscape position: Hillsides and ridges
Size of areas: 5 to 120 acres
Slope range: 5 to 20 percent
Parent material: Residuum from shale and siltstone

Composition

Garmon and Newbern soils and similar inclusions: 80 percent

Typical Profile

Garmon

Surface layer:
0 to 6 inches—dark yellowish brown channery silt loam

Subsoil:
6 to 20 inches—yellowish brown channery silt loam
20 to 29 inches—yellowish brown very channery silt loam

Bedrock:
29 inches—shale bedrock

Newbern

Surface layer:
0 to 3 inches—dark grayish brown and brown channery silt loam

Subsoil:
3 to 10 inches—yellowish brown channery silt loam
10 to 18 inches—yellowish brown very channery silt loam

Bedrock:
18 inches—shale bedrock

Soil Properties and Qualities

Drainage class: Garmon—well drained; Newbern—excessively drained
Permeability: Moderately rapid
Available water capacity: Garmon—low or moderate, 3 to 5 inches; Newbern—very low or low, 1 to 3 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: Garmon—20 to 40 inches; Newbern—10 to 20 inches

Contrasting Inclusions

- Christian and Faywood soils on similar landscapes

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- The depth to bedrock severely reduces the amount of water available to plants.
- Long rotations into grass and legumes are needed to reduce the hazard of erosion.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- Yields are limited by the low amount of water available to plants.
- Plants that can tolerate droughty conditions should be selected.
- The slope limits some management practices.
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
- The available water capacity is restricted by the limited soil depth.
- Lower growth rates limit the adaptability of desirable species.
- Because of the depth to bedrock, the rooting depth is restricted and trees are susceptible to windthrow.
- The slope may limit the use of some equipment.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
- Excavations for buildings and roads may expose bedrock.
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- The depth to bedrock limits the installation and permeability of filtration systems.
- Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 6e

GnF—Garmon-Newbern complex, 40 to 80 percent slopes, rocky

Setting

Landscape position: Hillsides
Size of areas: 5 to 35,000 acres
Parent material: Residuum from shale and siltstone

Composition

Garmon and Newbern soils and similar inclusions: 80 percent

Typical Profile

Garmon

Surface layer:
0 to 6 inches—dark yellowish brown channery silt loam

Subsoil:
6 to 20 inches—yellowish brown channery silt loam
20 to 29 inches—yellowish brown very channery silt loam

Bedrock:
29 inches—shale bedrock

Newbern

Surface layer:
0 to 3 inches—dark grayish brown and brown channery silt loam

Subsoil:
3 to 10 inches—yellowish brown channery silt loam
10 to 18 inches—yellowish brown very channery silt loam

Bedrock:
18 inches—shale bedrock

Soil Properties and Qualities

Drainage class: Garmon—well drained; Newbern—excessively drained

Permeability: Garmon—moderately rapid; Newbern—moderate
Available water capacity: Garmon—low or moderate, 3 to 5 inches; Newbern—very low or low, 1 to 3 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: Garmon—20 to 40 inches; Newbern—10 to 20 inches

Contrasting Inclusions

- Christian and Faywood soils on similar landscapes
- Dellrose and Renox soils on concave footslopes

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- Because of the slope, hazard of erosion, and other soil properties, these soils should not be used as cropland.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
- The slope is a limitation affecting all management practices and the use of farm equipment.

Woodland

Suitability: Poorly suited
Management measures and considerations:
- The available water capacity is restricted by the limited soil depth.
- Lower growth rates limit the adaptability of desirable species.
- Because of the depth to bedrock, the rooting depth is restricted and trees are susceptible to windthrow.
- Equipment use is limited because of the slope.
- Woodland management and logging operations are difficult because of the rock outcrops.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- The slope severely limits road designs and commercial and residential uses.
- Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- The depth to bedrock limits the installation and permeability of filtration systems.
- Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 7e

Ha—Hamblen loam, depressional

Setting

Landscape position: Depressions
Size of areas: 3 to 12 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Hamblen soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 65 inches—dark yellowish brown and brown loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid to slightly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 2 to 3 feet from December through March
Ponding: Occasional for brief periods from December through March

Contrasting Inclusions

- Lee soils on similar landscapes
- Christian and Frederick soils on hillsides

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- The seasonal high water table limits the production of some crops.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Only hay and pasture plants that can tolerate periodic inundation and seasonal wetness should be planted.

• Grazing when the soil is wet results in soil compaction and the destruction of the sod.

Woodland

Suitability: Well suited
Management measures and considerations:
• Unless there is intensive site preparation and maintenance, undesirable plants can prevent adequate reforestation by seedlings.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for all commercial and residential uses because of the ponding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for septic tank filter fields because of the ponding.

Interpretive Groups

Land capability classification: 3w

HhC—Hawthorne gravelly silt loam, 5 to 20 percent slopes

Setting

Landscape position: Ridges
Size of areas: 5 to 65 acres
Parent material: Residuum from cherty limestone and siltstone

Composition

Hawthorne soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 1 inch—brown gravelly silt loam

Subsoil:
1 to 4 inches—pale brown very gravelly silt loam
4 to 14 inches—light yellowish brown very channery silt loam
14 to 23 inches—yellowish brown extremely channery silt loam

Bedrock:
23 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Very low or low, 1 to 3 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 40 inches

Contrasting Inclusions

• Bewleyville and Mountview soils on the broader ridges
• Soils that have less than 35 percent rock fragments

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the limited depth to bedrock, which reduces the amount of water available to plants, the rock fragments, which hinder tillage, and the slope, this soil is unsuitable for crops.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.
• Rock fragments on the surface limit some management practices.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The large amount of rock fragments limit the use of some equipment and forestry practices.
• The available water capacity is restricted by the limited soil depth and large amount of rock fragments.
• Lower growth rates limit the adaptability of desirable species.

Dwellings

Suitability: Suited
Management measures and considerations:
• Rock fragments on the surface and throughout the soil interfere with excavations, establishing lawns, and landscaping.
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• The depth to bedrock limits the installation of filtration systems and reduces the permeability.

• Onsite investigation is needed to determine more suitable sites.
• The high content of coarse fragments limits the ability of the soil to filter effluent properly.

Interpretive Groups

Land capability classification: 6s

HhD—Hawthorne gravelly silt loam, 12 to 20 percent slopes

Setting

Landscape position: Hillsides
Size of areas: 5 to 97 acres
Slope range: 12 to 20 percent
Parent material: Residuum from cherty limestone and siltstone

Composition

Hawthorne soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 1 inch—brown gravelly silt loam

Subsoil:
1 to 4 inches—pale brown very gravelly silt loam
4 to 14 inches—light yellowish brown very channery silt loam
14 to 23 inches—yellowish brown extremely channery silt loam

Bedrock:
23 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Very low or low, 1 to 3 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 40 inches

Contrasting Inclusions

• Soils that have less than 35 percent rock fragments

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the limited depth to bedrock, which reduces the amount of water available to plants, the rock fragments, which hinder tillage, and the slope, this soil is unsuitable for crops.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.
• Rock fragments on the surface limit some management practices.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The large amount of rock fragments and the slope are limitations affecting the use of some equipment and forestry practices.
• The available water capacity is restricted by the limited soil depth and large amount of rock fragments.
• Lower growth rates limit the adaptability of desirable species.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Rock fragments on the surface and throughout the soil interfere with excavations, establishing lawns, and landscaping.
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• The depth to bedrock limits the installation of filtration systems and reduces the permeability.
• Onsite investigation is needed to determine more suitable sites.
• The high content of coarse fragments limits the ability of the soil to filter effluent properly.

Interpretive Groups

Land capability classification: 6s

HhF—Hawthorne gravelly silt loam, 20 to 70 percent slopes

Setting

Landscape position: Hillsides
Size of areas: 5 to 3,500 acres
Slope range: 20 to 70 percent
Parent material: Residuum from cherty limestone and siltstone

Composition

Hawthorne soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 1 inch—brown gravelly silt loam

Subsoil:
1 to 4 inches—pale brown very gravelly silt loam
4 to 14 inches—light yellowish brown very channery silt loam
14 to 23 inches—yellowish brown extremely channery silt loam

Bedrock:
23 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Available water capacity: Very low or low, 1 to 3 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 40 inches

Contrasting Inclusions

• Dellrose and Humphreys soils on concave footslopes

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the limited depth to bedrock, which reduces the amount of water available to plants, the rock fragments, which hinder tillage, and the slope, this soil is unsuitable for crops.
• Because of the slope, hazard of erosion, and other soil properties, this soil should not be used as cropland.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
• The slope is a limitation affecting all management practices and the use of farm equipment.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The large amount of rock fragments and the slope are limitations affecting the use of most equipment and forestry practices.
• The available water capacity is restricted because of the limited soil depth and large amount of rock fragments.
• Lower growth rates limit the adaptability of desirable species.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope severely limits road designs and commercial and residential uses.
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Septic lines may not function properly because of the slope.
• The depth to bedrock limits the installation of filtration systems and reduces the permeability.
• The high content of coarse fragments limits the ability of the soil to filter effluent properly.

Interpretive Groups

Land capability classification: 7s

HoB—Holston loam, 2 to 5 percent slopes

Setting

Landscape position: Cumberland River terrace
Size of areas: 5 to 14 acres
Parent material: Alluvium

Composition

Holston soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—dark yellowish brown loam

Subsoil:
9 to 20 inches—yellowish brown loam
20 to 65 inches—yellowish brown clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Byler soils on similar landscapes
• Soils in drainageways that flood

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forestry management.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

HoC2—Holston loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Cumberland River terrace
Size of areas: 5 to 59 acres
Slope range: 5 to 12 percent
Parent material: Alluvium

Composition

Holston soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsoil:
5 to 20 inches—yellowish brown loam
20 to 65 inches—yellowish brown clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Byler soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited

Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

HuB—Humphreys gravelly silt loam, 2 to 5 percent slopes

Setting

Landscape position: Footslopes and stream terraces
Size of areas: 5 to 10 acres
Slope range: 2 to 5 percent
Parent material: Cherty colluvium and alluvium

Composition

Humphreys soil and similar inclusions: 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown gravelly silt loam

Subsoil:
5 to 17 inches—brown gravelly silty clay loam
17 to 35 inches—dark yellowish brown gravelly clay loam
35 to 55 inches—dark yellowish brown gravelly silty clay loam

Substratum:
55 to 80 inches—yellowish brown very gravelly silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 5 to 6 feet from December through March

Contrasting Inclusions

• Ocana and Skidmore soils that are subject to flooding
• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

HuC—Humphreys gravelly silt loam, 5 to 12 percent slopes

Setting

Landscape position: Footslopes and stream terraces
Size of areas: 5 to 27 acres
Slope range: 5 to 12 percent
Parent material: Cherty colluvium and colluvium

Composition

Humphreys soil and similar inclusions: 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown gravelly silt loam

Subsoil:
5 to 17 inches—brown gravelly silty clay loam
17 to 35 inches—dark yellowish brown gravelly clay loam
35 to 55 inches—dark yellowish brown gravelly silty clay loam

Substratum:
55 to 80 inches—yellowish brown very gravelly silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 5 to 6 feet from December through March

Contrasting Inclusions

- Ocana and Skidmore soils that are subject to flooding
- Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- Water turnouts and diversions are needed on roads and landings to prevent erosion.
- Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Structures should be designed to conform to the natural slope.
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

Hw—Huntington silt loam, rarely flooded

Setting

Landscape position: Cumberland River flood plain
Size of areas: 5 to 240 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Huntington soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 19 inches—dark brown silt loam

Subsoil:
19 to 72 inches—dark yellowish brown silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High or very high, 7 to 9 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Flooding: Rare for very brief periods from December through May

Contrasting Inclusions

- Armour and Holston soils that are not subject to flooding
- Lindside and Melvin soils in the lower areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- Because of the flooding, this soil is marginally suitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 1

Le—Lee gravelly silt loam, occasionally flooded

Setting

Landscape position: Depressions and flood plains
Size of areas: 5 to 15 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Lee soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown gravelly silt loam

Subsoil:
8 to 38 inches—light brownish gray and gray gravelly silt loam

Substratum:
38 to 62 inches—gray gravelly silt loam

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: Moderate or high, 4 to 8 inches
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of less than 10 inches from December through April
Flooding: Occasional for brief periods from December through April

Contrasting Inclusions

- Lobelville, Ocana, and Sullivan soils on similar landscapes
- Monongahela soils that are not subject to flooding

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:
• Because of the seasonal high water table and flooding, this soil is poorly suited to crop production.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Equipment use during wet periods may cause rutting, soil compaction, and damage to tree roots.
• Landings and roads should be located away from areas that flood.
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for all commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding and seasonal high water table, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 4w

Ln—Lindside silt loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 60 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Lindside soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—dark yellowish brown silt loam

Subsoil:
7 to 40 inches—brown silt loam
40 to 61 inches—dark yellowish brown silty clay loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Very high, 8 to 10 inches
Soil reaction: Moderately acid or slightly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.2 to 2.0 feet from December through April
Flooding: Occasional for brief periods from December through April

Contrasting Inclusions

• Melvin soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Spring planting and fall harvesting may be delayed because of wetness.
• Plants that cannot tolerate wetness are not suitable for this soil.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Suited
Management measures and considerations:
• Equipment use during wet periods may cause rutting, soil compaction, and damage to tree roots.
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding and seasonal high water table, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

Lo—Lobelville loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 242 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Lobelville soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 3 inches—dark yellowish brown loam

Subsoil:
3 to 23 inches—dark yellowish brown loam
23 to 61 inches—gray or grayish brown gravelly silt loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Moderate
Available water capacity: Moderate
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 2 to 3 feet from December through April
Flooding: Occasional for very brief periods from December through April

Contrasting Inclusions

- Poorly drained Melvin soils
- Soils that have more than 35 percent gravel

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Spring planting and fall harvesting may be delayed because of wetness.
- Plants that cannot tolerate wetness are not suitable for this soil.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Suited
Management measures and considerations:
- Equipment use during wet periods may cause rutting, soil compaction, and damage to tree roots.
- Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- Because of the flooding and seasonal high water table, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

Me—Melvin silt loam, ponded

Setting

Landscape position: Depressions and flood plains
Size of areas: 5 to 62 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Melvin soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—grayish brown silt loam

Subsoil:
7 to 20 inches—grayish brown silt loam
20 to 39 inches—gray silt loam

Substratum:
39 to 60 inches—light brownish gray silty clay loam

Soil Properties and Qualities

Drainage class: Poorly drained
Permeability: Moderate
Available water capacity: High or very high, 7 to 9 inches
Soil reaction: Moderately acid to neutral

Figure 5.—Melvin soils have a seasonal high water table. Frequent ponding also limits most uses in the depressional areas.

Depth to bedrock: More than 60 inches
Seasonal high water table: At or above the surface from December through May (fig. 5)
Ponding: Frequent for long periods from December through May

Contrasting Inclusions

- Higher areas that are not poorly drained

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the seasonal high water table and ponding, this soil is unsuitable for crop production.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Because of the seasonal high water table, the rooting depth is restricted and trees are susceptible to windthrow.
• Because of the seasonal wetness, the use of equipment is limited to dry periods.

• Equipment use during wet periods may cause rutting, soil compaction, and damage to tree roots.
• Chemical or mechanical treatments may be needed to decrease plant competition.
• Landings and roads should be located away from areas that pond.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• Because of the ponding and seasonal high water table, this soil is unsuitable for all commercial and residential uses.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the ponding and seasonal high water table, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 5w

MmD2—Mimosa silt loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 65 acres
Parent material: Residuum from limestone

Composition

Mimosa soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 11 inches—yellowish brown silt loam

Subsoil:
11 to 51 inches—yellowish brown clay

Bedrock:
51 inches—phosphatic limestone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid to moderately acid
Depth to bedrock: 40 to 60 inches

Contrasting Inclusions

• Dellrose soils in concave areas
• Soils that have bedrock at a depth of less than 40 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Yields are lower because of the reduced available water capacity.
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.

Pasture and hay

Suitability: Suited (fig. 6)
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.
• Yields are limited by the reduced amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.

Woodland

Suitability: Suited
Management measures and considerations:
• The available water capacity is restricted by the high content of clay.
• Lower growth rates limit the adaptability of desirable species.
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• The high content of clay limits some practices.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Figure 6.—Mimosa silt loam, 12 to 20 percent slopes, eroded, is commonly used for pasture.

• Because of the potential for shrinking and swelling of clays, foundations should be reinforced in order to prevent cracking.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• This soil is not suitable for septic systems because of the slow or very slow permeability. Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 6e

MnC2—Minvale gravelly loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Benches
Size of areas: 5 to 65 acres
Parent material: Colluvium or alluvium underlain by limestone residuum

Composition

Minvale soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown gravelly loam

Subsoil:
5 to 12 inches—dark yellowish brown gravelly loam
12 to 20 inches—brown gravelly clay loam
20 to 48 inches—yellowish red gravelly clay loam
48 to 65 inches—red very gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Christian and Frederick soils on hillsides
- Sullivan and Hamblen soils in depressions

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- The content of gravel reduces the available water capacity and lowers yields.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

MnD2—Minvale gravelly loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Footslopes and benches
Size of areas: 5 to 62 acres
Parent material: Colluvium or alluvium underlain by limestone residuum

Composition

Minvale soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown gravelly loam

Subsoil:
5 to 12 inches—dark yellowish brown gravelly loam
12 to 20 inches—brown gravelly clay loam
20 to 48 inches—yellowish red gravelly clay loam
48 to 65 inches—red very gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Christian and Frederick soils on hillsides
- Sullivan and Hamblen soils in depressions

Use and Management

Cropland

Suitability: Poorly suited

Management measures and considerations:
• The content of gravel reduces the available water capacity and lowers yields.
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• The slope limits some management practices.

Woodland

Suitability: Suited
Management measures and considerations:
• The slope may limit the use of some equipment.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Septic lines may not function properly because of the slope.

Interpretive Groups

Land capability classification: 4e

MnE2—Minvale gravelly loam, 20 to 40 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 80 acres
Parent material: Colluvium or alluvium underlain by limestone residuum

Composition

Minvale soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown gravelly loam

Subsoil:
5 to 12 inches—dark yellowish brown gravelly loam
12 to 20 inches—brown gravelly clay loam
20 to 48 inches—yellowish red gravelly clay loam
48 to 65 inches—red very gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Christian and Frederick soils on hillsides
• Sullivan and Hamblen soils in depressions

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the slope, hazard of erosion, and other soil properties, this soil should not be used as cropland.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• The slope limits some management practices.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• The slope may limit the use of some equipment.
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope severely limits road designs and commercial and residential uses.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Areas of less sloping soils should be selected. An onsite investigation is needed.

Interpretive Groups

Land capability classification: 6e

MoB2—Monongahela silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Highland Rim stream terrace
Size of areas: 5 to 175 acres
Parent material: Alluvium

Composition

Monongahela soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 24 inches—yellowish brown silt loam
24 to 28 inches—light yellowish brown silt loam
28 to 50 inches—light olive brown loam; firm fragipan
50 to 68 inches—light yellowish brown gravelly loam; firm fragipan
68 to 80 inches—brownish yellow gravelly loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow within the fragipan
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 2.5 feet from December through April

Contrasting Inclusions

• Bewleyville and Trace soils on similar landscapes
• Lee, Lobelville, and Sullivan soils that are subject to flooding

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• The limited depth to the fragipan reduces the amount of water available to plants.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting forestry management.

Dwellings

Suitability for dwellings without basements: Suited
Suitability for dwellings with basements: Poorly suited
Management measures and considerations:
• Subsurface drainageways and landshaping help to remove excess water.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
• Curtain drains and landscape designs may be needed to remove excess water.

Interpretive Groups

Land capability classification: 2e

MoC2—Monongahela silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Stream terraces
Size of areas: 5 to 27 acres
Parent material: Alluvium over cherty alluvium or cherty residuum

Composition

Monongahela soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 24 inches—yellowish brown silt loam
24 to 28 inches—light yellowish brown silt loam

28 to 50 inches—light olive brown loam; firm fragipan
50 to 68 inches—light yellowish brown gravelly loam; firm fragipan
68 to 80 inches—brownish yellow gravelly loam

Soil Properties and Qualities

Drainage class: Moderately well drained
Permeability: Slow within the fragipan
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 2.5 feet from December through April

Contrasting Inclusions

- Bewleyville and Trace soils on similar landscapes
- Lee, Lobelville, and Sullivan soils that are subject to flooding

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- The limited depth to the fragipan reduces the amount of water available to plants.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Suited
Management measures and considerations:
- Equipment use during wet periods may cause rutting, soil compaction, and damage to tree roots.
- Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability for dwellings without basements: Suited
Suitability for dwellings with basements: Poorly suited
Management measures and considerations:
- Subsurface drainageways and landshaping help to remove excess water.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
- Curtain drains and landscape designs may be needed to remove excess water.

Interpretive Groups

Land capability classification: 3e

MtB2—Mountview silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Broad flats and divides
Size of areas: 5 to 90 acres
Parent material: Loess over residuum or alluvium

Composition

Mountview soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 28 inches—yellowish brown silty clay loam
28 to 34 inches—strong brown silty clay loam
34 to 45 inches—yellowish red silty clay loam
45 to 80 inches—red clay

Soil Properties and Qualities

Drainage class: Well drained or moderately well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 3.0 feet from December through April in concave areas

Contrasting Inclusions

- Dickson soils on similar landscapes
- Frederick soils on shoulder slopes and nose slopes
- Sugargrove soils on similar landscapes

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forestry management.

Dwellings

Suitability for dwellings without basements: Well suited
Suitability for dwellings with basements: Suited
Management measures and considerations:
- Subsurface drainageways and landshaping help to remove excess water.
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Curtain drains and landscape designs may be needed to remove excess water.

Interpretive Groups

Land capability classification: 2e

MtC2—Mountview silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Broad flats and divides of the Highland Rim
Size of areas: 5 to 200 acres
Parent material: Loess over residuum or alluvium

Composition

Mountview soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 8 inches—brown silt loam

Subsoil:
8 to 28 inches—yellowish brown silty clay loam
28 to 34 inches—strong brown silty clay loam
34 to 45 inches—yellowish red silty clay loam
45 to 80 inches—red clay

Soil Properties and Qualities

Drainage class: Well drained or moderately well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of 1.5 to 3.0 feet from December through April in concave areas

Contrasting Inclusions

- Dickson soils on similar landscapes
- Sugargrove soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited

Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Suited
Management measures and considerations:
• Subsurface drainageways and landshaping help to remove excess water.
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Curtain drains and landscape designs may be needed to remove excess water.
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

No—Nolin silt loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 95 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Nolin soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 14 inches—brown silt loam

Subsoil:
14 to 30 inches—dark brown silt loam
30 to 62 inches—dark yellowish brown silt loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Very high, 8 to 9 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of more than 4 feet from December through April
Flooding: Occasional for brief periods from December through April

Contrasting Inclusions

• Armour and Holston soils that are not subject to flooding
• Lindside and Melvin soils in the lower areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Restricting grazing during periods of flooding helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

Oc—Ocana gravelly silt loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 100 acres
Slope range: 0 to 2 percent
Parent material: Gravelly alluvium

Composition

Ocana soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsoil:
7 to 17 inches—dark yellowish brown gravelly silt loam
17 to 36 inches—dark yellowish brown gravelly loam
36 to 48 inches—dark yellowish brown gravelly clay loam

Substratum:
48 to 65 inches—brown very gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of more than 4 feet from December through March
Flooding: Occasional for brief periods from December through March

Contrasting Inclusions

• Humphreys and Renox soils that are not subject to flooding

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Restricting grazing during periods of flooding helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

Pq—Pits, quarry

This map unit consists of areas that are actively being used as stone quarries. The areas have had soil material removed to the hard bedrock. The hard bedrock is being drilled and blasted for a variety of uses in the local area. The major use is for gravel in the transportation and construction industries. The vertical sidewalls consist of hard limestone bedrock. Normally, an area adjacent to the site is used to deposit the soil overburden and undesirable rock material. These spoil areas are used when the area is reclaimed to vegetation. Several of these areas adjacent to active quarries have been planted to trees and permanent grasses.

No capability class is assigned to this map unit.

ReB—Renox silt loam, 2 to 5 percent slopes

Setting

Landscape position: Footslopes and stream terraces
Size of areas: 5 to 35 acres
Parent material: Colluvium or alluvium

Composition

Renox soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 10 inches—dark yellowish brown silt loam

Subsoil:
10 to 26 inches—dark yellowish brown silt loam
26 to 65 inches—dark yellowish brown and yellowish brown gravelly silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 7 inches
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Ocana and Skidmore soils that are subject to flooding
• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

ReC2—Renox silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Footslopes and stream terraces
Size of areas: 5 to 65 acres
Parent material: Colluvium or alluvium

Composition

Renox soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 26 inches—dark yellowish brown silt loam
26 to 65 inches—dark yellowish brown and yellowish brown gravelly silty clay loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 7 inches
Soil reaction: Strongly acid to neutral
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Ocana and Skidmore soils that are subject to flooding

• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

SeC2—Sengtown cobbly loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridges
Size of areas: 5 to 46 acres
Parent material: Residuum from cherty and cobbly limestone

Composition

Sengtown soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 15 inches—cobbly loam

Subsoil:
15 to 20 inches—yellowish red gravelly silty clay loam
20 to 70 inches—red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Etowah and Mountview soils in concave areas
• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.

• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Increasing the size of the septic tank filter field helps to compensate for the slower permeability.

Interpretive Groups

Land capability classification: 3e

SeD2—Sengtown cobbly loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 34 acres
Parent material: Residuum from cherty and cobbly limestone

Composition

Sengtown soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 15 inches—cobbly loam

Subsoil:
15 to 20 inches—yellowish red gravelly silty clay loam
20 to 70 inches—red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Etowah and Mountview soils in concave areas
• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• The slope limits some management practices.

Woodland

Suitability: Suited
Management measures and considerations:
• The slope may limit the use of some equipment.
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Increasing the size of the septic tank filter field helps to compensate for the slower permeability.

Interpretive Groups

Land capability classification: 4e

SeE2—Sengtown cobbly loam, 20 to 40 percent slopes, eroded

Setting

Landscape position: Hillsides
Size of areas: 5 to 23 acres
Parent material: Residuum from cherty limestone

Composition

Sengtown soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 15 inches—cobbly loam

Subsoil:
15 to 20 inches—yellowish red gravelly silty clay loam
20 to 70 inches—red gravelly clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Soils that have bedrock at a depth of less than 60 inches

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the slope, this soil is unsuitable for cropland.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• The slope is a limitation affecting most management practices.
• The use of farm equipment is unsafe because of the slope.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Constructing roads and skid trails as closely on the contour as possible can reduce the hazard of erosion.
• Water diversions, water bars, and broad-based dips should be used to direct water and sediment away from the road and streams and into duff layers or filter strips.
• Cuts and fills need to be seeded to permanent cover.
• Most equipment use is limited on the steep slopes.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• The slope greatly limits the building of structures and local roads and streets.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Areas of less sloping soils should be selected. An onsite investigation is needed.

Interpretive Groups

Land capability classification: 6e

Sm—Skidmore gravelly loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 145 acres
Slope range: 0 to 2 percent
Parent material: Gravelly alluvium (fig. 7)

Composition

Skidmore soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 10 inches—brown gravelly loam

Subsoil:
10 to 19 inches—brown very gravelly coarse sandy loam
19 to 32 inches—brown very gravelly and extremely gravelly clay loam

Substratum:
32 to 65 inches—brown and dark yellowish brown extremely gravelly coarse sandy loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderately rapid
Available water capacity: Low, 2 to 4 inches
Soil reaction: Moderately acid to neutral
Depth to bedrock: More than 40 inches

Figure 7.—Skidmore gravelly loam, occasionally flooded, has more than 35 percent of its volume composed of gravel, cobbles, and stones.

Seasonal high water table: At a depth of more than 3 feet from December through March
Flooding: Occasional for very brief periods from December through May

Contrasting Inclusions

• Humphreys and Renox soils that are not subject to flooding

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.

Woodland

Suitability: Suited
Management measures and considerations:
• Large amounts of rock fragments reduce seedling survival rates. Planting at higher densities or planting large seedlings helps to compensate.

• Chemical or mechanical treatments may be needed to decrease plant competition.
• Landings and roads should be located away from areas that flood.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for all commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 3s

Sn—Staser fine sandy loam, rarely flooded

Setting

Landscape position: Cumberland River flood plain levee
Size of areas: 5 to 145 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Staser soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 13 inches—dark brown fine sandy loam

Subsoil:
13 to 88 inches—dark brown and dark yellowish brown loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Moderately acid or slightly acid
Depth to bedrock: More than 60 inches
Flooding: Rare for very brief periods from December through March

Contrasting Inclusions

• Lindside and Melvin in the lower areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Because of the flooding, this soil is marginally suitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 1

SrB2—Sugargrove gravelly silt loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Ridges
Size of areas: 5 to 159 acres
Parent material: Residuum from cherty siltstone and siltstone

Composition

Sugargrove soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsoil:
7 to 12 inches—yellowish brown gravelly silt loam
12 to 24 inches—strong brown channery silt loam
24 to 36 inches—strong brown and light yellowish brown very channery clay

Substratum:
36 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 60 inches to hard bedrock

Contrasting Inclusions

- Christian and Mountview soils on the higher ridges
- Hawthorne soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Yields are limited by the low amount of water available to plants.
- Plants that can tolerate droughty conditions should be selected.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- Yields are limited by the low amount of water available to plants.
- Plants that can tolerate droughty conditions should be selected.

Woodland

Suitability: Suited
Management measures and considerations:
- Rock fragments may limit some forestry practices.

Dwellings

Suitability: Suited
Management measures and considerations:
- Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
- The depth to bedrock limits the installation of filtration systems and reduces the permeability.
- Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 2e

SrC2—Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Ridges
Size of areas: 5 to 120 acres
Parent material: Residuum from cherty siltstone and siltstone

Composition

Sugargrove soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsoil:
7 to 12 inches—yellowish brown gravelly silt loam
12 to 24 inches—strong brown channery silt loam
24 to 36 inches—strong brown and light yellowish brown very channery clay

Substratum:
36 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 60 inches to hard bedrock

Contrasting Inclusions

- Christian and Mountview soils on the higher ridges
- Hawthorne soils on similar landscapes

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Suited
Management measures and considerations:
• Rock fragments on the surface limit some management practices.
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.

Woodland

Suitability: Suited
Management measures and considerations:
• Rock fragments may limit some forestry practices.
• Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• The depth to bedrock limits the installation of filtration systems and reduces the permeability.
• Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 3e

SrD2—Sugargrove gravelly silt loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Ridges and hillsides
Size of areas: 5 to 110 acres
Parent material: Residuum from cherty siltstone and siltstone

Composition

Sugargrove soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 7 inches—brown gravelly silt loam

Subsoil:
7 to 12 inches—yellowish brown gravelly silt loam
12 to 24 inches—strong brown channery silt loam
24 to 36 inches—strong brown and light yellowish brown very channery clay

Substratum:
36 inches—soft weathered siltstone bedrock

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate or moderately rapid
Available water capacity: Moderate, 4 to 6 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: 20 to 60 inches to hard bedrock

Contrasting Inclusions

• Hawthorne soils on similar landscapes
• Humphreys soils in concave areas

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.
• Long rotations into grass and legumes are needed to reduce the hazard of erosion.
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
• Nutrient management practices, such such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Poorly suited
Management measures and considerations:
• Rock fragments on the surface limit some management practices.
• Yields are limited by the low amount of water available to plants.
• Plants that can tolerate droughty conditions should be selected.
• The slope limits some management practices.

Woodland

Suitability: Suited
Management measures and considerations:
• Rock fragments may limit some forestry practices.
• The slope may limit the use of some equipment.

Dwellings

Suitability: Poorly suited
Management measures and considerations:
• Rock fragments on the surface and throughout the soil interfere with excavations, establishing lawns, and landscaping.
• Excavations for buildings and roads may expose bedrock.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Septic lines may not function properly because of the slope.
• The depth to bedrock limits the installation of filtration systems and reduces the permeability.
• Onsite investigation is needed to determine more suitable sites.

Interpretive Groups

Land capability classification: 4e

Su—Sullivan silt loam, depressional

Setting

Landscape position: Depressions
Size of areas: 3 to 9 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Sullivan soil and similar inclusions: 90 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 26 inches—dark yellowish brown silt loam
26 to 32 inches—dark brown loam
32 to 62 inches—brown loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of more than 4 feet from December through March
Ponding: Occasional for very brief periods from December through March

Contrasting Inclusions

• Hamblen and Melvin soils on similar landscapes
• Christian and Frederick soils on hillsides

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Seasonal ponding limits the production of some water-sensitive crops.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for all commercial and residential uses because of the ponding.

Septic tank absorption fields

Suitability: Unsuited

Management measures and considerations:
• This soil is unsuitable for septic tank filter fields because of the ponding.

Interpretive Groups

Land capability classification: 2w

Sv—Sullivan silt loam, occasionally flooded

Setting

Landscape position: Flood plains
Size of areas: 5 to 62 acres
Slope range: 0 to 2 percent
Parent material: Alluvium

Composition

Sullivan soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 26 inches—dark yellowish brown silt loam
26 to 32 inches—dark brown loam
32 to 62 inches—brown loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches
Seasonal high water table: At a depth of more than 4 feet from December through April
Flooding: Occasional for brief periods from December through March

Contrasting Inclusions

• Lee and Lobelville soils on similar landscapes
• Monongahela and Trace soils on terraces

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.
• Restricting grazing during periods of wetness helps to prevent soil compaction and the destruction of desirable plants.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• This soil is unsuitable for most commercial and residential uses because of the flooding.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Because of the flooding, this soil is unsuitable for septic tank filter fields.

Interpretive Groups

Land capability classification: 2w

TbD—Talbott-Rock outcrop complex, 5 to 20 percent slopes

Setting

Landscape position: Hillsides and ridges
Size of areas: 5 to 35 acres
Parent material: Limestone residuum

Composition

Talbott soil and similar inclusions: 65 percent
Rock outrop: 20 percent
Minor soils: 15 percent

Typical Profile

Talbott

Surface layer:
0 to 5 inches—dark brown silty clay loam

Subsoil:
5 to 33 inches—red clay

Bedrock:
33 inches—limestone bedrock

Rock outcrop

Rock outcrop consists of nearly vertical rock ledges 1 to 10 feet high.

Properties and Qualities of the Talbott Soil

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Low or moderate, 2 to 6 inches
Soil reaction: Generally, moderately acid or strongly acid; the layer directly above bedrock ranges to neutral
Depth to bedrock: 20 to 40 inches

Contrasting Inclusions

- Minvale soils in concave areas

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
- This map unit is unsuitable for cropland because of the rock outcrops.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
- Rock outcrops cannot be traversed with farm equipment, and they limit most management practices.

Woodland

Suitability: Poorly suited
Management measures and considerations:
- Constructing roads along the contour reduces the severe hazard of erosion.
- Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
- The available water capacity is limited by the high content of clay.
- Lower growth rates limit the adaptability of desirable species.
- Equipment use is limited because of rock outcrops and the slope.

Dwellings

Suitability: Unsuited
Management measures and considerations:
- Rock outcrop limits the construction of dwellings and local roads and streets.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
- Rock outcrops and slow permeability are limitations affecting septic tank absorption fields.

Interpretive Groups

Land capability classification: 7s

TbE—Talbott-Rock outcrop complex, 20 to 40 percent slopes

Setting

Landscape position: Hillsides and ridges
Size of areas: 5 to 65 acres
Parent material: Limestone residuum

Composition

Talbott soil and similar inclusions: 65 percent
Rock outcrop: 20 percent
Minor soils: 15 percent

Typical Profile

Talbott

Surface layer:
0 to 5 inches—dark brown silty clay loam

Subsoil:
5 to 33 inches—red clay

Bedrock:
33 inches—limestone bedrock

Rock outcrop

Rock outcrop consists of nearly vertical rock ledges 1 to 10 feet high.

Properties and Qualities of the Talbott Soil

Drainage class: Well drained
Permeability: Slow or very slow
Available water capacity: Low or moderate, 2 to 6 inches
Soil reaction: Generally, moderately acid or strongly acid; the layer directly above bedrock ranges to neutral
Depth to bedrock: 20 to 40 inches

Contrasting Inclusions

- Minvale soils in concave areas

Use and Management

Cropland

Suitability: Unsuited
Management measures and considerations:
• Because of the rock outcrops and the slope, this map unit is unsuitable for cropland.

Pasture and hay

Suitability: Unsuited
Management measures and considerations:
• Rock outcrops and the slope are limitations affecting most management practices.
• The use of farm equipment is unsafe because of the rock outcrops and the slope.

Woodland

Suitability: Poorly suited
Management measures and considerations:
• Constructing roads along the contour reduces the severe hazard of erosion.
• Constructing water turnouts and water bars and seeding disturbed areas help to keep sediment away from streams.
• The available water capacity is restricted by the high content of clay.
• Lower growth rates limit the adaptability of desirable species.
• The use of most equipment is limited because of the rock outcrops and the slope.

Dwellings

Suitability: Unsuited
Management measures and considerations:
• Rock outcrops and the slope limit the construction of dwellings and local roads and streets.

Septic tank absorption fields

Suitability: Unsuited
Management measures and considerations:
• Rock outcrops, the slope, and the slow permeability are limitations affecting septic tank absorption fields.

Interpretive Groups

Land capability classification: 7s

TrB—Trace silt loam, 2 to 5 percent slopes

Setting

Landscape position: Terraces and footslopes
Size of areas: 5 to 23 acres
Parent material: Alluvium and colluvium

Composition

Trace soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 25 inches—brown and strong brown silt loam
25 to 43 inches—strong brown silty clay loam
43 to 55 inches—strong brown clay loam

Substratum:
55 to 80 inches—yellowish brown gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Monongahela soils on similar landscapes

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
• Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Well suited
Management measures and considerations:
• This soil has few limitations affecting septic tank filter fields.

Interpretive Groups

Land capability classification: 2e

TrC2—Trace silt loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Terraces and footslopes
Size of areas: 5 to 16 acres
Parent material: Alluvium and colluvium

Composition

Trace soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—brown silt loam

Subsoil:
5 to 25 inches—brown and strong brown silt loam
25 to 43 inches—strong brown silty clay loam
43 to 55 inches—strong brown clay loam

Substratum:
55 to 80 inches—yellowish brown gravelly loam

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: High, 6 to 8 inches
Soil reaction: Strongly acid or moderately acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

• Monongahela soils on similar landscapes

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
• Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
• Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
• Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
• Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
• Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• Chemical or mechanical treatments may be needed to decrease plant competition.

Dwellings

Suitability: Well suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
• Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

W—Water

This map unit consists of areas inundated with water all of the year and generally includes rivers, lakes, and ponds.

No capability class is assigned to this map unit.

WaB2—Waynesboro loam, 2 to 5 percent slopes, eroded

Setting

Landscape position: Terraces
Size of areas: 5 to 12 acres
Parent material: Alluvium

Composition

Waynesboro soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—strong brown loam

Subsoil:
5 to 21 inches—red clay
21 to 68 inches—dark red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strong acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Etowah soils on similar landscapes
- Mountview and Dickson soils in concave areas

Use and Management

Cropland

Suitability: Well suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- This soil has few limitations affecting forestry management.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.

Interpretive Groups

Land capability classification: 2e

WaC2—Waynesboro loam, 5 to 12 percent slopes, eroded

Setting

Landscape position: Terraces
Size of areas: 5 to 20 acres
Parent material: Alluvium

Composition

Waynesboro soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—strong brown loam

Subsoil:
5 to 21 inches—red clay
21 to 68 inches—dark red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Strongly acid or very strongly acid, except in limed areas
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Etowah soils on similar landscapes
- Mountview and Dickson soils in concave areas

Use and Management

Cropland

Suitability: Suited
Management measures and considerations:
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops reduce the hazard of erosion. These practices should be intensified as slope increases.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.
- Site-specific recommendations are needed.

Pasture and hay

Suitability: Well suited
Management measures and considerations:
- Periodic clipping and mowing helps to maintain uniform growth and discourages weed competition.
- Proper stocking rates, lime and fertilizer programs, and pasture rotations increase the quality and quantity of forages.

Woodland

Suitability: Well suited
Management measures and considerations:
- Water turnouts and diversions are needed on roads and landings to prevent erosion.

Dwellings

Suitability: Well suited
Management measures and considerations:
- Topsoil should be stockpiled for the reclamation of areas that are disturbed during construction.
- Careful use of equipment and good design practices prevent the runoff of sediment to off-site areas.

Septic tank absorption fields

Suitability: Suited
Management measures and considerations:
- Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
- Field lines should be installed along the contour of the slope.

Interpretive Groups

Land capability classification: 3e

WaD2—Waynesboro loam, 12 to 20 percent slopes, eroded

Setting

Landscape position: Terraces
Size of areas: 5 to 22 acres
Parent material: Alluvium

Composition

Waynesboro soil and similar inclusions: 85 percent

Typical Profile

Surface layer:
0 to 5 inches—strong brown loam

Subsoil:
5 to 21 inches—red clay
21 to 68 inches—dark red clay

Soil Properties and Qualities

Drainage class: Well drained
Permeability: Moderate
Available water capacity: Moderate or high, 5 to 7 inches
Soil reaction: Very strongly acid or strongly acid
Depth to bedrock: More than 60 inches

Contrasting Inclusions

- Etowah and Mountview soils in concave areas

Use and Management

Cropland

Suitability: Poorly suited
Management measures and considerations:
- Long rotations into grass and legumes are needed to reduce the hazard of erosion.
- Minimum tillage, farming on the contour, grassed waterways, and winter cover crops are essential in managing cropland.
- Nutrient management practices, such as performing soil tests, returning crop residue to the soil, and controlling the timing of fertilizer and chemical treatments, improve soil health and productivity.

Pasture and hay

Suitability: Suited
Management measures and considerations:
- The slope limits some management practices.

Woodland

Suitability: Suited

Management measures and considerations:
• Water turnouts and diversions are needed on roads and landings to prevent erosion.
• The slope may limit the use of some equipment.

Dwellings

Suitability: Suited
Management measures and considerations:
• Structures should be designed to conform to the natural slope.

Septic tank absorption fields

Suitability: Poorly suited
Management measures and considerations:
• Increasing the size of the septic tank filter field helps to compensate for the slower permeability.
• Septic lines may not function properly because of the slope.

Interpretive Groups

Land capability classification: 4e

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, slightly limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately well suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Approximately 40,000 acres in the survey area is used for hay, pasture, and crops. Most of this acreage

is used as pasture and hay for beef cattle production. The recent trend is a decline in all of the crops grown. Tobacco, the primary crop grown in Clay County, has diminished over the past decade to only 510 acres in 2002. About 450 acres of corn, 300 acres of wheat, and 200 acres of soybeans are planted annually *(17)*. Currently, most of the crop production is in areas near the Hermitage Springs, Oak Grove, and Union Hill communities. These areas include Bewleyville, Dickson, Minvale, and Mountview soils, which are naturally low in fertility and somewhat acidic. The productivity of these soils can be increased or maintained with additions of lime and fertilizer according to soil test recommendations.

Evidence gained during this survey indicates that most of Clay County has been cleared and was in cultivation at one time. Loss of the topsoil and mixing of the subsoil in the plow layer are common. Controlling soil erosion is the greatest management concern in the county. Many soils, such as Christian, Frederick, and Sengtown, have a clayey, infertile subsoil near the surface. These soils are especially susceptible to loss of productivity through erosion. Other soils with fragipans, such as Byler, Dickson, and Monongahela, have a limited rooting depth and a limited available water-holding capacity because of past erosion. Controlling erosion is also important in reducing non-source pollution from dairies, poultry-growing houses, and chemical and fertilizer runoff. Farming on the contour, terracing, no-till planting, and establishing grassed waterways are important erosion-control practices. Other conservation practices, such as cover crops, returning crop residue to the soil, and minimum tillage, help to increase the content of organic matter and maintain productivity.

Other management concerns in the county include wetness and restricted tillage. Several soils have high water tables that delay planting and harvesting dates and also cause damage to moisture-sensitive crops and increase disease potential. Other soils have a high potential for flooding. Drainage systems and diversions can be somewhat beneficial, but inherent site conditions often cannot be overcome. Very little tobacco is grown on the Cumberland River flood plain because of these reasons. Hawthorne, Ocana, Renox, and Sugargrove soils have rock fragments near or on the surface. Rock fragments can take up soil volume and thus reduce the available water-holding capacity. Gravel and cobbles can interfere with and damage implements and mowers. As erosion carries away topsoil, these fragments become concentrated on the surface and increase the restrictions on tillage. Erosion can affect soils in other ways. Natural processes that deposit fertile soil material on flood plains can become a problem if the streams become choked with this sediment. Many flood plains in the county have evidence of this deposition as overwash or recently deposited sediment at the soil surface. In some areas, this lightly colored, overwash sediment is a foot or more deep.

Overgrazing livestock is the primary problem in areas in permanent sod. Forages, such as timothy and orchardgrass, mixed with legumes, such as alfalfa and clover, cannot compete with native weeds and grasses over time in these overgrazed areas. Reseeding these areas in combination with proper herbicide use is necessary and can increase the life of the stand. Mixtures of tall fescue and white clover are the dominant forage in Clay County. They are well adapted to most soils where slopes are less than 30 percent. Pasture and hay are managed similarly, except hay requires more additions of fertilizer annually. Planting warm-season grasses or drilling small grains in pastures are good management practices that utilize different growing seasons in the same field.

Soil samples should be collected annually on cropland and biannually on pasture and hay. Contact the Tennessee Agricultural Extension Service for more information and recommendations.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity

of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive practices that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows by the U.S. Department of Agriculture Handbook 210:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w,* or *s* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w* or *s* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of map units in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a

favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 6. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Forest Productivity and Management

Originally all of Clay County was forested by large hardwood trees, including yellow-poplar, oak, hickory, and maple. About 105,500 acres, or 63 percent of the county, is currently in woodland. Privately owned woodlands cover a little more than 97,300 acres, and corporately owned woodlands cover about 8,200 acres *(13)*.

Woodlands occur in areas of diverse terrain and soils. Most of the merchantable timber is on the steep hillsides of the Highland Rim physiographic area. The most heavily wooded sites are on the steep and very steep Garmon and Newbern soils. These soils are shallow to moderately deep over calcareous shale bedrock. The predominant forest type is oak-hickory. Growth rate is good. The slope and available water capacity are the main limitations affecting use and management. The Highland Rim has many scattered woodlands in areas of the rolling to steep Christian, Frederick, Sengtown, Mountview, and Bewleyville soils. These soils are deep and very deep and have clayey subsoils. Productivity is good. The slope is the main limitation affecting use and management.

The steep and very steep hillsides in the Nashville Basin are heavily wooded. Barfield, Gladdice, and Mimosa soils are the predominant soils in these areas. Also included are large areas of rock outcrops. The soils are fine textured and droughty and have low productivity. The woodland is dominated by eastern red cedar, with mixtures of oak and hickory. The slope, available water capacity, and presence of rock outcrops are the main limitations affecting use and management.

The flood plains in the county consist of small, highly productive woodland areas. Soils in these areas are very deep, loamy, and gravelly. They include Ocana, Sullivan, Nolin, Staser, and Lindside soils. The woodland is dominated by yellow-poplar, red oak, ash, and boxelder. Some areas of the poorly drained Melvin soils also occur. These areas support water-tolerant species, such as sweetgum and boxelder.

Production is primarily from natural regeneration of stands after the original virgin timber is cut. The woodland in Clay County is valuable for lumber production, and a large portion of the income in the county is derived from lumbering operations and wood-related manufacturing. Woodland also provides wildlife habitat, opportunities for recreation, natural beauty, and soil and water conservation.

The tables in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management.

Forest Productivity

In table 7, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available at the local office of the Natural Resources Conservation Service or on the Internet *(19)*.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the

amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forest Management

In table 8, parts I through V, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately well suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance; and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent

maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately well suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreation

Clay County's scenery and water resources attract many visitors each year. Most of the recreation potential is directly linked with Dale Hollow Lake. Several cultural events, however, gain national attention annually. Playing marbles is a favorite pastime in the survey area, and the National Rolley-Hole tournament is held at nearby Standing Stone State Park. Almost two dozen "marble yards" are constructed in the county for playing Rolley-Hole. Other unique activities include the "eagle watch." According to the U.S. Army Corps of Engineers, one of the largest populations of bald eagles in the lower United States is around Dale Hollow Lake. Each winter, wildlife officials sponsor a barge from which visitors can view the eagles in their native habitat. In addition, the smallmouth bass of world record and several other species of State records were caught in Dale Hollow Lake.

The soils of the survey area are rated in table 9, parts I and II, according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil

feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in table 9 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and

the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 10, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes,

and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan ponds and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that

are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features

that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, non-rippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and

when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a *probable* or *improbable* source of sand and gravel. A rating of *probable* means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the

productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 15 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 16, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table

16, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 16 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Chemical Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 18 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in

most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 18 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(18, 20)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(21)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(20)* and in “Keys to Soil Taxonomy” *(18)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Armour Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 12 percent
Associated soils: Arrington, Huntington, Lindside, Renox, and Staser

Taxonomic class: Fine-silty, mixed, active, thermic Ultic Hapludalfs

Typical Pedon

Armour silt loam, 2 to 5 percent slopes (fig. 8); 1.1 miles northeast of Celina on Tennessee Highway 53, about 4.9 miles north on Neely Creek Road, 0.2 mile west on Lower Ford Road, 25 feet south of the road; USGS Celina Quadrangle; UTM coordinates: Easting 634164 Northing 4050650; lat. 36 degrees 35 minutes 31 seconds N. and long. 85 degrees 30 minutes 01 second W.

Ap—0 to 14 inches; dark brown (7.5YR 3/4) silt loam; moderate fine granular structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 29 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; few distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; few fine black (10YR 2/1) iron-manganese concretions; slightly acid; gradual smooth boundary.

Bt2—29 to 55 inches; strong brown (7.5YR 5/6) silty clay loam; common medium yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; common fine black (10YR 2/1) iron-manganese concretions; moderately acid; gradual smooth boundary.

Bt3—55 to 70 inches; strong brown (7.5YR 5/6) silty clay loam; common medium prominent light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; few distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; common fine black (10YR 2/1) iron-manganese concretions; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert and shale
Reaction: Strongly acid to slightly acid

A horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR, 7.5YR, or, rarely, 5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent

2Bt horizon (if it occurs):
Hue—10YR, 7.5YR, or 5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silty clay loam or clay
Content of rock fragments—0 to 5 percent

Arrington Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Armour, Egam, Lindside, and Staser
Taxonomic class: Fine-silty, mixed, superactive, thermic Cumulic Hapludolls

Typical Pedon

Arrington silt loam, occasionally flooded; in Jackson County, Tennessee; 7.5 miles northwest of the intersection of Tennessee Highway 56 and Tennessee Highway 85, about 4.9 miles west of the intersection of Tennessee Highway 135 and Tennessee Highway 56, about 0.1 mile south of the intersection of Tennessee Highway 56 and Hunting Creek Road, 433 feet east of Hunting Creek Road; USGS Whitleyville Quadrangle; UTM coordinates: Easting 613217 Northing 4035852; lat. 36 degrees 27 minutes 40 seconds N. and long. 85 degrees 44 minutes 11 seconds W.

Ap—0 to 10 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; very friable; many fine and very fine roots; 5 percent angular fragments of chert; slightly acid; gradual smooth boundary.

A—10 to 37 inches; dark brown (10YR 3/3) silt loam; common fine and medium faint brown (10YR 4/3) mottles; moderate medium granular structure; very friable; many fine roots; few fine pores; slightly acid; gradual wavy boundary.

Bw—37 to 55 inches; dark yellowish brown (10YR 4/4) silty clay loam; many fine and medium distinct brown (10YR 4/3) and few fine faint yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; common fine

and very fine roots; common fine and very fine pores; slightly acid; clear smooth boundary.
C—55 to 80 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few fine black (10YR 2/1) iron-manganese concretions; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert
Reaction: Slightly acid

A horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—3 or 4
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent

C horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 10 percent

Barfield Series

Depth class: Shallow
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Nashville Basin
Landform: Hillsides
Parent material: Residuum from phosphatic limestone
Slope range: 20 to 70 percent
Associated soils: Dellrose, Gladdice, and Mimosa
Taxonomic class: Clayey, mixed, active, thermic Lithic Hapludolls

Typical Pedon

Barfield silty clay loam in an area of Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes; 3.9 miles southwest on Tennessee Highway 53 from Celina, 2.2 miles east onto Wet Mill Creek Road, 50 feet north of the road in woods; USGS Burristown Quadrangle; UTM coordinates: Easting 633099 Northing 4039659; lat. 36 degrees 29 minutes 34 seconds N. and long. 85 degrees 30 minutes 50 seconds W.

A—0 to 7 inches; dark brown (10YR 3/3) silty clay loam; moderate medium granular structure; friable; slightly sticky; slightly plastic; neutral; clear smooth boundary.
Bw—7 to 14 inches; dark yellowish brown (10YR 4/4) clay; moderate medium subangular blocky structure; firm; moderately sticky; moderately plastic; neutral; abrupt wavy boundary.
R—14 inches; phosphatic limestone bedrock.

Range in Characteristics

Depth to bedrock: 8 to 20 inches
Kind of rock fragments: Limestone
Reaction: Slightly acid to slightly alkaline

A horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture of fine-earth fraction—silty clay loam
Content of rock fragments—5 to 20 percent

Bw horizon:
Hue—10YR or 2.5Y
Value—4
Chroma—3 or 4
Texture of fine-earth fraction—silty clay loam, silty clay, or clay
Content of rock fragments—5 to 35 percent

Bewleyville Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Broad divides and terraces
Parent material: Alluvium and loess
Slope range: 2 to 12 percent
Associated soils: Christian, Dickson, Frederick, and Mountview
Taxonomic class: Fine-silty, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Bewleyville silt loam, 5 to 12 percent slopes, eroded; 5.45 miles south on Union Hill Road from its intersection with Tennessee Highway 52 at Moss, 0.6 mile south on McCormick Ridge Road, 750 feet west of the road in pasture; USGS Union Hill Quadrangle; UTM coordinates: Easting 616635 Northing 4044720;

lat. 36 degrees 32 minutes 26 seconds N. and long. 85 degrees 41 minutes 49 seconds W.

Ap—0 to 9 inches; brown (7.5YR 4/3) silt loam; common medium distinct strong brown (7.5YR 4/6) mottles; moderate fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Bt1—9 to 19 inches; strong brown (7.5YR 4/6) silt loam; moderate fine subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds and in pores; 5 percent chert gravel; strongly acid; gradual smooth boundary.

Bt2—19 to 30 inches; strong brown (7.5YR 4/6) silt loam; moderate fine subangular blocky structure; friable; few distinct reddish yellow (5YR 4/6) clay films on faces of peds and in pores; common fine black (10YR 2/1) manganese nodules; strongly acid; clear wavy boundary.

2Bt3—30 to 40 inches; yellowish red (5YR 4/6) silty clay loam; moderate fine subangular blocky structure; friable; many distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; common fine black (10YR 2/1) manganese nodules; strongly acid; clear wavy boundary.

2Bt4—40 to 57 inches; red (2.5YR 5/6) silty clay loam; strong fine subangular blocky structure; friable; many distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; common fine black (10YR 2/1) manganese nodules; strongly acid; gradual wavy boundary.

2Bt5—57 to 77 inches; red (2.5YR 4/6) clay; strong fine angular blocky structure; firm; many distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; 4 percent subrounded chert gravel; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert
Reaction: Very strongly acid to moderately acid

A horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—7.5YR or 5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent

2Bt horizon:
Hue—5YR or 2.5YR
Value—3 to 6
Chroma—4 to 8
Texture of fine-earth fraction—clay loam, silty clay loam, or clay
Content of rock fragments—0 to 15 percent

Byler Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow and very slow within the fragipan
Physiographic area: Nashville Basin
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 5 percent
Associated soils: Armour, Holston, and Lindside
Taxonomic class: Fine-silty, siliceous, semiactive, thermic Oxyaquic Fragiudalfs

Typical Pedon

Byler silt loam, 2 to 5 percent slopes (fig. 9); 0.55 mile northwest on Tennessee Highway 52 from the bridge over the Cumberland River, 125 feet east of the road in a field; USGS Celina Quadrangle; UTM coordinates: Easting 632470 Northing 4046884; lat. 36 degrees 33 minutes 29 seconds N. and long. 85 degrees 31 minutes 11 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many fine and very fine roots; slightly acid; clear smooth boundary.

Bt—9 to 20 inches; yellowish brown (10YR 5/6) silt loam; common distinct dark yellowish brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; few fine and very fine roots; few faint clay films in pores; few fine black (10YR 2/1) iron-manganese stains on faces of peds; moderately acid; clear irregular boundary.

Btx1—20 to 31 inches; brownish yellow (10YR 6/6) silt loam; moderate very coarse prismatic structure; firm; few faint clay films on faces of peds and in pores; common medium and coarse black (10YR 2/1) iron-manganese stains on faces of peds and in pores; common fine prominent light brownish gray (10YR 6/2) iron depletions on faces of prisms and as seams; common medium prominent strong brown (7.5YR 5/6) iron concentrations on faces of prisms; brittle in 70 percent of the mass; strongly acid; gradual wavy boundary.

Btx2—31 to 58 inches; light yellowish brown (10YR

6/4) silty clay loam; moderate very coarse prismatic structure; firm; few faint clay films on faces of peds and in pores; common medium and coarse black (10YR 2/1) iron-manganese stains on faces of peds and in pores; common fine prominent light brownish gray (10YR 6/2) iron depletions on faces of prisms and as seams; common medium prominent strong brown (7.5YR 5/6) iron concentrations on faces of prisms; 5 percent well rounded chert fragments; brittle in 70 percent of the mass; strongly acid; gradual smooth boundary.

2Bt—58 to 82 inches; strong brown (7.5YR 5/6) silty clay loam; common medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; common distinct yellowish red (5YR 5/6) clay films on faces of peds and in pores; few medium black (10YR 2/1) iron-manganese stains on faces of peds and in pores; few medium prominent light brownish gray (10YR 6/2) iron depletions; 5 percent well rounded chert fragments; strongly acid; gradual smooth boundary.

2BC—82 to 95 inches; strong brown (7.5YR 5/6) gravelly silty clay loam; weak medium subangular blocky structure; friable; common medium prominent pale brown (10YR 6/3) and common fine prominent light brownish gray (10YR 6/2) iron depletions; 20 percent well rounded chert fragments; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Depth to fragipan: 18 to 26 inches
Kind of rock fragments: Rounded chert or shale
Reaction: Strongly acid or moderately acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—iron-manganese concentrations and grayish iron depletions
Content of rock fragments—0 to 5 percent

Btx horizon:
Hue—10YR
Value—5 or 6
Chroma—2 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—iron-manganese concentrations and grayish iron depletions
Content of rock fragments—0 to 10 percent

2Bt or 2BC horizon (if it occurs):
Hue—10YR, 7.5YR, or 5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silty clay loam or clay
Redoximorphic features—iron-manganese concentrations and grayish iron depletions
Content of rock fragments—0 to 35 percent

Caneyville Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Highland Rim
Landform: Ridges and hillsides
Parent material: Limestone
Slope range: 5 to 25 percent
Associated soils: Christian, Garmon, Lonewood, and Newbern
Taxonomic class: Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Caneyville silt loam in an area of Caneyville-Lonewood complex, 6 to 25 percent slopes, eroded, rocky; in Cumberland County, Kentucky; 4.3 miles east of Burksville on Kentucky Highway 90, south 3.8 miles on Kentucky Highway 449, south 1.1 miles on Scott-Finley Road, 1,100 feet east of Scott-Finley Road in pasture; USGS Frogue Quadrangle; UTM coordinates: Easting 651561 Northing 4062918; lat. 36 degrees 31 minutes 59 seconds N. and long. 85 degrees 18 minutes 12 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common fine roots; neutral; gradual wavy boundary.

Bt1—10 to 19 inches; strong brown (7.5YR 4/6) loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct reddish yellow (7.5YR 6/8) clay films on faces of peds; neutral; clear wavy boundary.

2Bt2—19 to 32 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure;

firm; common distinct strong brown (7.5YR 4/6) clay films on faces of peds; few fine black (10YR 2/1) soft iron-manganese masses; neutral; clear wavy boundary.

2BC—32 to 36 inches; yellowish red (5YR 5/8) clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine black (10YR 2/1) soft iron-manganese masses; slightly acid; abrupt wavy boundary.

2R—36 inches; coarse-grained, hard gray limestone.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Chert, limestone, sandstone, and siltstone
Reaction: Very strongly acid to neutral in the upper part of the profile and moderately acid to slightly acid in the lower part

A horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3
Texture of fine-earth fraction—loam, silt loam, or silty clay loam
Content of rock fragments—0 to 10 percent

Bt horizon:
Hue—10YR, 7.5YR, or 5YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—silty clay loam, silty clay, or clay
Content of rock fragments—0 to 35 percent

BC horizon (if it occurs):
Hue—10YR, 7.5YR, 5YR, or 2.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silty clay, clay, or clay loam

Christian Series

Depth class: Deep and very deep
Drainage class: Well drained
Permeability: Slow
Physiographic area: Highland Rim
Landform: Ridges and hillsides
Parent material: Residuum from siltstone, limestone, and sandy limestone
Slope range: 5 to 40 percent
Associated soils: Caneyville, Faywood, Frederick, Sengtown, Sugargrove, and Talbott
Taxonomic class: Fine, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Christian loam, 12 to 20 percent slopes; in Overton County, Tennessee; 2.5 miles south of Hilham on Tennessee Highway 136, about 400 feet southwest of Campground Church in a wooded area; USGS Hilham Quadrangle; UTM coordinates: Easting 6040460 Northing 4026465; lat. 36 degrees 22 minutes 23 seconds N. and long. 85 degrees 26 minutes 03 seconds W.

Oi—1 inch to 0; slightly decomposed and fresh leaf litter.

A—0 to 3 inches; brown (10YR 4/3 loam; moderate medium granular structure; friable; strongly acid; abrupt smooth boundary.

BE—3 to 8 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; strongly acid; gradual smooth boundary.

Bt1—8 to 18 inches; strong brown (7.5YR 5/8) clay loam; common medium distinct strong brown (7.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; strongly acid; gradual smooth boundary.

Bt2—18 to 30 inches; strong brown (7.5YR 5/8) clay; strong fine and medium angular blocky structure; firm; few distinct strong brown (7.5YR 4/6) clay films on faces of peds; strongly acid; gradual smooth boundary.

Bt3—30 to 48 inches; strong brown (7.5YR 5/8) clay; common fine and medium distinct brownish yellow (10YR 6/8) and common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; common distinct strong brown (7.5YR 4/6) clay films on faces of peds; 10 percent siltstone channers; strongly acid; gradual wavy boundary.

Bt4—48 to 57 inches; strong brown (7.5YR 5/8) extremely channery clay loam; weak medium subangular blocky structure; friable; few distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; 70 percent siltstone channers; strongly acid; gradual wavy boundary.

Cr—57 to 62 inches; weathered siltstone bedrock.

Range in Characteristics

Depth to bedrock: More than 40 inches
Kind of rock fragments: Siltstone and chert
Reaction: Strongly acid or very strongly acid

A horizon:
Hue—7.5YR or 10YR

Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 15 percent
Other characteristics—in some pedons in wooded areas, horizon has value of 3 and chroma of 2 or 3

BA horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 20 percent

BE horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 20 percent

Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—3 to 5
Chroma—4 to 8
Texture of fine-earth fraction—clay
Content of rock fragments—0 to 35 percent

Dellrose Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Physiographic area: Nashville Basin
Landform: Hillsides and fans
Parent material: Colluvium from cherty limestone, siltstone, and shale
Slope range: 12 to 40 percent
Associated soils: Garmon, Hawthorne, Gladdice, Mimosa, Newbern, and Renox
Taxonomic class: Fine-loamy, mixed, semiactive, thermic Typic Paleudults

Typical Pedon

Dellrose gravelly silt loam, 20 to 45 percent slopes; 1.0 mile west of Celina on Tennessee Highway 52, about 1.6 miles north on Proctor Road, 600 feet northwest of the road in pasture; USGS Celina Quadrangle; UTM coordinates: Easting 631845 Northing 4049231; lat. 36 degrees 34 minutes 36 seconds N. and long. 85 degrees 31 minutes 35 seconds W.

Ap—0 to 7 inches; dark yellowish brown (10YR 3/4) gravelly silt loam; moderate medium granular structure; friable; many fine and very fine roots; 30 percent angular fragments of chert; moderately acid; clear smooth boundary.

Bt1—7 to 22 inches; dark brown (7.5YR 3/4) gravelly silt loam; weak medium subangular blocky structure; friable; common fine and very fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; 30 percent angular fragments of chert; moderately acid; clear smooth boundary.

Bt2—22 to 66 inches; strong brown (7.5YR 4/6) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; 15 percent angular fragments of chert; moderately acid; gradual smooth boundary.

2Bt3—66 to 80 inches; strong brown (10YR 4/6) clay; weak coarse subangular blocky structure; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; common fine black (10YR 2/1) soft iron-manganese masses; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert and siltstone
Reaction: Moderately acid to very strongly acid

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—10 to 35 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silty clay loam
Content of rock fragments—typically 10 to 35 percent; in some areas, content ranges to 50 percent in the lower part of the horizon

2Bt horizon (if it occurs):
Hue—10YR, 7.5YR, or 5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silty clay, clay, or silty clay loam
Content of rock fragments—0 to 15 percent

Dewey Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Broad rolling uplands
Parent material: Older fine-textured alluvium
Slope range: 2 to 12 percent
Associated soils: Bewleyville and Mountview
Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Typical Pedon

Dewey silt loam, 5 to 12 percent slopes; in Overton County, Tennessee; 4.0 miles west of Rickman on Tennessee Highway 293, about 0.1 mile east of Spring Creek, 300 feet south in a field; USGS Windle Quadrangle; UTM coordinates: Easting 640120 Northing 4016230; lat. 36 degrees 16 minutes 51 seconds N. and long. 85 degrees 26 minutes 23 seconds W.

Ap—0 to 7 inches; brown (7.5YR 4/3) silt loam; moderate medium granular structure; friable; many fine and very fine roots; moderately acid; abrupt smooth boundary.
Bt1—7 to 14 inches; yellowish red (5YR 4/6) silty clay loam; moderate fine subangular blocky structure; common fine roots; common distinct reddish brown (5YR 4/6) clay films on faces of peds and in pores; strongly acid; gradual smooth boundary.
Bt2—14 to 70 inches; red (2.5YR 4/6) clay; moderate and strong fine subangular blocky structure; few fine roots; many distinct reddish brown (2.5YR 4/4) clay films on faces of peds and in pores; few rounded gravel; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert or quartzite pebbles
Reaction: Strongly acid or very strongly acid

Ap horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent

Bt horizon:
Hue—5YR or 2.5YR
Value—4 or 5
Chroma—6 to 8
Texture of fine-earth fraction—silty clay or clay
Content of rock fragments—0 to 10 percent

Dickson Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow and very slow in the fragipan
Physiographic area: Highland Rim
Landform: Divides
Parent material: Loess over alluvium or residuum
Slope range: 2 to 5 percent
Associated soils: Bewleyville, Christian, Frederick, and Mountview
Taxonomic class: Fine-silty, siliceous, semiactive, thermic Glossic Fragidults

Typical Pedon

Dickson silt loam, 2 to 5 percent slopes, eroded (fig. 10); 0.75 mile west on Union Hill Road from its intersection with McCormick Ridge Road, 0.5 mile north on Terry Odele Road, 125 feet west of the road in a field; USGS Union Hill Quadrangle; UTM coordinates: Easting 615798 Northing 4046086; lat. 36 degrees 33 minutes 11 seconds N. and long. 85 degrees 42 minutes 22 seconds W.

A—0 to 9 inches; brown (10YR 5/3) silt loam; moderate medium granular structure; friable; common very fine roots; moderately acid; abrupt smooth boundary.
Bw1—9 to 20 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common very fine roots; few fine iron-manganese nodules; very strongly acid; clear wavy boundary.
Bw2—20 to 23 inches; light yellowish brown (2.5Y 5/4) silt loam; weak fine subangular blocky structure; friable; common very fine roots; common fine prominent light gray (10YR 7/2) iron depletions; common fine and medium iron-manganese nodules; very strongly acid; abrupt irregular boundary.
Btx—23 to 38 inches; light yellowish brown (2.5Y 6/4) silt loam; moderate very coarse prismatic structure parting to moderate thin platy; very firm; common medium and coarse black (10YR 2/1) soft iron-manganese masses; common fine prominent light gray (10YR 7/2) iron depletions on faces of prisms and as seams; common fine yellowish red (5YR 4/6) iron accumulations on faces of prisms; 5 percent chert gravel; brittle in 80 percent of the mass; strongly acid; abrupt irregular boundary.
2Bt—38 to 79 inches; red (2.5YR 4/6) clay; common prominent strong brown (7.5YR 5/6) mottles; strong medium subangular blocky structure; firm;

many distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; common fine and medium prominent light gray (10YR 7/1) iron depletions; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Depth to fragipan: 18 to 36 inches
Kind of rock fragments: Chert
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Redoximorphic features—few or common iron-manganese nodules and grayish iron depletions
Content of rock fragments—0 to 5 percent

B/E or E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Redoximorphic features—few or common iron-manganese nodules and grayish iron depletions
Content of rock fragments—0 to 5 percent

Btx horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Redoximorphic features—few or common iron-manganese nodules, grayish iron depletions, and reddish iron accumulations
Content of rock fragments—0 to 10 percent

2Bt horizon:
Hue—7.5YR, 5YR, or 2.5YR
Value—3 to 5
Chroma—4 to 8
Texture of fine-earth fraction—silty clay loam, clay loam, or clay
Redoximorphic features—few or common iron-manganese nodules, grayish iron depletions, and reddish iron accumulations
Content of rock fragments—0 to 35 percent

Etowah Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 20 percent
Associated soils: Bewleyville and Holston
Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Etowah loam, 2 to 5 percent slopes; in Overton County, Tennessee; 6.1 miles south on Tennessee Highway 85 to its intersection with Tennessee Highway 52 at West Fork, 300 feet west of the road in a field; USGS Crawford Quadrangle; UTM coordinates: Easting 663305 Northing 4019514; lat. 36 degrees 18 minutes 25 seconds N. and long. 85 degrees 10 minutes 52 seconds W.

Ap—0 to 5 inches; brown (10YR 4/3) loam; moderate fine granular structure; friable; common very fine and fine roots throughout; moderately acid; clear smooth boundary.

Bt1—5 to 20 inches; strong brown (7.5YR 4/6) clay loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; few faint clay films on faces of peds and in pores; very few black (10YR 2/1) iron-manganese concretions; strongly acid; gradual smooth boundary.

Bt2—20 to 48 inches; yellowish red (5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few very fine and fine roots; common distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; common black (10YR 2/1) iron-manganese concretions; strongly acid; clear smooth boundary.

Bt3—48 to 72 inches; yellowish red (5YR 5/6) clay loam; common medium reddish yellow (7.5YR 6/6) and common fine and medium light brown (7.5YR 6/4) mottles; weak coarse subangular blocky structure; very friable; common distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Kind of rock fragments: Quartzite pebbles, rounded chert, and sandstone gravel
Reaction: Strongly acid or very strongly acid

A horizon:
Hue—10YR or 7.5YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 15 percent

Bt horizon:
Hue—7.5YR, 5YR, or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture of fine-earth fraction—silty clay loam or clay loam
Content of rock fragments—0 to 10 percent

Faywood Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Highland Rim
Landform: Hillsides and ridges
Parent material: Residuum weathered from limestone bedrock
Slope range: 12 to 40 percent
Associated soils: Hawthorne and Christian
Taxonomic class: Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Faywood silt loam in an area of Christian-Faywood complex, 12 to 20 percent slopes, rocky; from the intersection of Tennessee Highway 52 and Old Highway 52 in Allons, 0.5 mile on Old Highway 52, about 12.0 miles on Oakley-Allons Road, 6.1 miles on Willow Grove Highway, 0.75 mile on Hogan Road, 10 feet northeast in woods; USGS Dale Hollow Reservoir SE Quadrangle; UTM coordinates: Easting 650329 Northing 4049124; lat. 36 degrees 34 minutes 32 seconds N. and long. 85 degrees 19 minutes 11 seconds W.

A—0 to 1 inch; very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; very friable; common fine and medium roots; 5 percent channers of shale; moderately acid; abrupt smooth boundary.
Bt1—1 to 8 inches; yellowish brown (10YR 5/6) silty clay loam; common distinct yellowish red (5YR 4/6) mottles; strong fine subangular blocky structure; firm; moderately sticky; moderately plastic; few fine and medium roots; strongly acid; clear smooth boundary.
Bt2—8 to 17 inches; yellowish brown (10YR 5/4) clay; common strong brown (7.5YR 5/6) mottles; strong medium angular blocky structure; firm; moderately sticky; moderately plastic; few fine roots; common distinct dark brown (7.5YR 4/4) clay films on faces of peds; strongly acid; clear smooth boundary.
Bt3—17 to 25 inches; yellowish brown (10YR 5/4) clay; many fine distinct light yellowish brown (2.5Y 6/4) and many fine distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; 10 percent channers of shale; strongly acid; abrupt smooth boundary.
R—25 inches; hard shale bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Hard chert and shale
Reaction: Strongly acid to slightly acid

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 15 percent

A horizon:
Hue—10YR
Value—3
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 15 percent

BE horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 15 percent

Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—silty clay or clay with silty clay loam
Content of rock fragments—5 to 15 percent

Frederick Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow

Physiographic area: Highland Rim
Landform: Rolling and hilly uplands
Parent material: Residuum from limestone and siltstone
Slope range: 5 to 40 percent
Associated soils: Bewleyville, Christian, Dickson, and Mountview
Taxonomic class: Fine, mixed, semiactive, mesic Typic Paleudults

Typical Pedon

Frederick loam, 20 to 40 percent slopes, eroded (fig. 11); 1.1 miles north on Tennessee Highway 51 from its intersection with Tennessee Highway 52, about 325 feet southwest of the road; USGS Union Hill Quadrangle; UTM coordinates: Easting 621812 Northing 4051655; lat. 36 degrees 36 minutes 09 seconds N. and long. 85 degrees 38 minutes 17 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) loam; weak medium granular structure; friable; many fine roots; moderately acid; abrupt smooth boundary.
EB—6 to 10 inches; light brown (7.5YR 6/4) loam; weak medium granular structure; friable; many fine roots; strongly acid; clear smooth boundary.
Bt1—10 to 16 inches; yellowish red (5YR 5/8) clay loam; moderate fine subangular blocky structure; friable; common fine roots; few faint clay films on faces of peds and in pores; 4 percent chert gravel; strongly acid; clear smooth boundary.
Bt2—16 to 31 inches; red (2.5YR 5/8) clay; moderate fine subangular blocky structure; friable; common fine roots; many distinct red (2.5YR 4/6) clay films on faces of peds and in pores; 5 percent chert gravel; strongly acid; clear smooth boundary.
Bt3—31 to 66 inches; yellowish red (5YR 5/6) clay; many fine and medium prominent brownish yellow (10YR 6/8) mottles; strong fine angular blocky structure; firm; few fine roots; many distinct reddish brown (5YR 5/4) clay films on faces of peds and in pores; 15 percent chert and siltstone gravel; very strongly acid; clear smooth boundary.
Bt4—66 to 84 inches; yellowish red (5YR 5/6) gravelly clay; many fine and medium prominent brownish yellow (10YR 6/8) mottles; strong medium subangular blocky structure; firm; few distinct reddish brown (5YR 5/4) clay films on faces of peds; 20 percent chert and siltstone gravel; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 72 inches
Kind of rock fragments: Chert and siltstone
Reaction: Very strongly acid or strongly acid

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 35 percent

EB horizon:
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 35 percent

Bt horizon:
Hue—7.5YR in the upper part of the horizon and 5YR or 2.5YR in the lower part
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silty clay loam, clay loam, or clay
Content of rock fragments—0 to 35 percent

Garmon Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Moderately rapid
Physiographic area: Highland Rim escarpment
Landform: Ridges and hillsides
Parent material: Residuum from shale and siltstone
Slope range: 5 to 80 percent
Associated soils: Newbern, Hawthorne, and Renox
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Dystric Eutrudepts

Typical Pedon

Garmon channery silt loam in an area of Newbern-Garmon complex, 30 to 80 percent slopes; in Overton County, Tennessee; 0.7 mile southeast of Livingston Boat Dock, 800 feet north of Livingston Boat Dock Road in a wooded area; USGS Dale Hollow Dam, TN-KY Quadrangle; UTM coordinates: Easting 645180 Northing 4042145; lat. 36 degrees 30 minutes 49 seconds N. and long. 85 degrees 22 minutes 43 seconds W.

Oi—1 inch to 0; slightly decomposed and fresh leaf litter.
A—0 to 3 inches; brown (10YR 4/3) channery silt loam; moderate fine and medium granular structure; friable; common fine and few medium roots; 20 percent channers of shale; slightly acid; abrupt smooth boundary.
BA—3 to 6 inches; dark yellowish brown (10YR 4/4)

channery silt loam; weak medium subangular blocky structure; friable; common fine and common medium roots; 20 percent channers of shale; slightly acid; clear smooth boundary.

Bw1—6 to 20 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium subangular blocky structure; friable; few fine and few medium roots; 20 percent channers of shale; moderately acid; gradual wavy boundary.

Bw2—20 to 29 inches; yellowish brown (10YR 5/4) very channery silt loam; moderate medium subangular blocky structure; friable; few fine and few medium roots; 40 percent channers of shale; moderately acid; abrupt wavy boundary.

R—29 inches; black calcareous shale bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Shale
Reaction: Slightly acid or neutral

A horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or loam
Content of rock fragments—5 to 35 percent

BA horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or loam
Content of rock fragments—5 to 35 percent

Bw horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—silt loam or loam
Content of rock fragments—5 to 45 percent

BC horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—30 to 45 percent

Gladdice Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Nashville Basin
Landform: Hillsides
Parent material: Residuum from phosphatic limestone
Slope range: 20 to 70 percent
Associated soils: Barfield, Dellrose, and Mimosa
Taxonomic class: Fine, mixed, active, thermic Vertic Hapludalfs

Typical Pedon

Gladdice silty clay loam in an area of Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes; 2.2 miles south of Celina on Tennessee Highway 53, about 200 feet east of the highway; USGS Celina Quadrangle; UTM coordinates: Easting 631574 Northing 4042633; lat. 36 degrees 31 minutes 12 seconds N. and long. 85 degrees 31 minutes 50 seconds W.

A—0 to 9 inches; brown (10YR 4/3) silty clay loam; moderate fine granular structure; friable; slightly sticky; slightly plastic; common medium and fine roots; moderately acid; clear smooth boundary.

Bt1—9 to 23 inches; yellowish brown (10YR 5/6) clay; weak coarse subangular blocky structure; firm; moderately sticky; moderately plastic; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; few fine black (10YR 2/1) iron-manganese concentrations throughout; moderately acid; gradual smooth boundary.

Bt2—23 to 28 inches; yellowish brown (10YR 5/6) clay; weak coarse subangular blocky structure; firm; very sticky; very plastic; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; many fine black (10YR 2/1) iron-manganese concentrations throughout; slightly acid; abrupt smooth boundary.

R—28 inches; hard phosphatic limestone bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Chert gravel and limestone channers
Reaction: Moderately acid to slightly alkaline

A horizon:
Hue—10YR
Value—4
Chroma—2 to 4
Texture of fine-earth fraction—silty clay loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture of fine-earth fraction—silty clay or clay
Content of rock fragments—0 to 15 percent

Hamblen Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Bottoms of depressions
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Etowah and Sullivan
Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Fluvaquentic Eutrudepts

Typical Pedon

Hamblen loam, occasionally flooded; in Overton County, Tennessee; 3.7 miles northwest of Livingston, 3.4 miles west on Tennessee Highway 85, about 1.4 miles north on Flatt Creek Road, 25 feet southeast of Flatt Creek Road in a field; USGS Hilham Quadrangle; UTM coordinates: Easting 44698 Northing 29934; lat. 36 degrees 24 minutes 13 seconds N. and long. 85 degrees 23 minutes 11 seconds W.

A—0 to 6 inches; brown (10YR 4/3) loam; moderate medium granular structure; friable; common fine and very fine roots; moderately acid; clear smooth boundary.
Bw1—6 to 23 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common fine roots; common fine and medium black (10YR 2/1) manganese concretions; moderately acid; clear smooth boundary.
Bw2—23 to 36 inches; brown (10YR 5/3) loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium black (10YR 2/1) manganese concretions; common fine and medium light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual smooth boundary.
C—36 to 65 inches; brown (10YR 5/3) loam; massive; friable; few fine black (10YR 2/1) manganese concretions; common fine and medium light brownish gray (10YR 6/2) iron depletions; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert
Reaction: Moderately acid or slightly acid

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—few or common iron-manganese concentrations and common or many grayish iron depletions
Content of rock fragments—0 to 5 percent

C horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam, silty clay loam, or loam
Redoximorphic features—few or common iron-manganese concentrations and common or many grayish iron depletions
Content of rock fragments—0 to 30 percent

Hawthorne Series

Depth class: Moderately deep
Drainage class: Somewhat excessively drained
Permeability: Moderately rapid
Physiographic area: Highland Rim
Landform: Ridges and hillsides
Parent material: Residuum from cherty limestone and siltstone
Slope range: 5 to 70 percent
Associated soils: Dellrose and Sugargrove
Taxonomic class: Loamy-skeletal, siliceous, semiactive, thermic Typic Dystrudepts

Typical Pedon

Hawthorne gravelly silt loam, 20 to 70 percent slopes; 5.55 miles south on Bakerton Road from its intersection with Tennessee Highway 52 west of Moss, 0.4 mile east on Crabtree Creek Road, 1.0 mile east on North Fork Road, 20 feet east of the road; USGS Union Hill Quadrangle; UTM coordinates: Easting 613383 Northing 4040660; lat. 36 degrees 30 minutes 16 seconds N. and long. 85 degrees 44 minutes 02 seconds W.

Oi—1 inch to 0; slightly decomposed leaf litter and organic matter.
A—0 to 1 inch; brown (10YR 4/3) gravelly silt loam; moderate fine granular structure; very friable; many very fine and fine and common medium

roots throughout; 30 percent angular chert fragments; neutral; abrupt smooth boundary.

E—1 to 4 inches; pale brown (10YR 6/3) very gravelly silt loam; moderate medium granular structure; very friable; common very fine, fine, and medium roots throughout; 45 percent subangular chert fragments; strongly acid; gradual smooth boundary.

Bw1—4 to 14 inches; light yellowish brown (10YR 6/4) very channery silt loam; weak fine subangular blocky structure; friable; common very fine and fine roots throughout; 60 percent channers of siltstone; very strongly acid; gradual smooth boundary.

Bw2—14 to 23 inches; yellowish brown (10YR 6/6) extremely channery silt loam; weak fine subangular blocky structure; friable; common very fine and fine roots throughout; 70 percent channers of siltstone; strongly acid; abrupt wavy boundary.

Cr—23 inches; thinly bedded weathered siltstone; highly fractured with very thin seams of very pale brown silt loam.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Chert and siltstone
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—10 to 35 percent

E horizon:
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—35 to 60 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of fine-earth fraction—silt loam
Content of rock fragments—35 to 60 percent

Holston Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 12 percent
Associated soils: Armour and Monongahela
Taxonomic class: Fine-loamy, siliceous, semiactive, thermic Typic Paleudults

Typical Pedon

Holston loam, 5 to 12 percent slopes, eroded; 1.0 mile north of Celina on Tennessee Highway 53, about 0.8 mile southeast on Peterman Bend Road, 75 feet north of the road in pasture; USGS Dale Hollow Dam Quadrangle; UTM coordinates: Easting 635692 Northing 4043696; lat. 36 degrees 31 minutes 44 seconds N. and long. 85 degrees 29 minutes 04 seconds W.

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) loam; weak fine granular structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

Bt1—9 to 20 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable; common fine roots; moderately acid; gradual smooth boundary.

Bt2—20 to 32 inches; yellowish brown (10YR 5/6) clay loam; common medium brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual smooth boundary.

Bt3—32 to 45 inches; yellowish brown (10YR 5/6) clay loam; common medium brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual smooth boundary.

Bt4—45 to 60 inches; yellowish brown (10YR 5/6) clay loam; common medium brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; 10 percent rounded gravel; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert and sandstone gravel
Reaction: Strongly acid or very strongly acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 15 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 15 percent

Humphreys Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Physiographic area: Highland Rim and Nashville Basin
Landform: Footslopes, terraces, and alluvial fans
Parent material: Colluvium and gravelly alluvium
Slope range: 2 to 12 percent
Associated soils: Dellrose, Ocana, and Skidmore
Taxonomic class: Fine-loamy, mixed, semiactive, thermic Ultic Hapludalfs

Typical Pedon

Humphreys gravelly silt loam, 5 to 12 percent slopes; in Jackson County, Tennessee; 2.8 miles northwest of the intersection of Tennessee Highway 56 and Hunting Creek Road, 1.8 miles north of the intersection of Tennessee Highway 56 and Crabtree Creek Road, 500 feet west of Crabtree Creek Road, in pasture; USGS Willette Quadrangle; UTM coordinates: Easting 611327 Northing 4037858; lat. 36 degrees 28 minutes 46 seconds N. and long. 85 degrees 45 minutes 26 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 3/4) gravelly silt loam; weak medium granular structure; very friable; many fine and very fine roots; 15 percent chert, shale, and siltstone fragments; moderately acid; gradual wavy boundary.

BA—5 to 17 inches; brown (10YR 4/3) gravelly silty clay loam; weak medium subangular blocky structure; friable; many fine and very fine roots; 25 percent chert, shale, and siltstone fragments; moderately acid; clear wavy boundary.

Bt1—17 to 35 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; moderate fine and medium subangular blocky structure; friable; common fine and very fine roots; common faint dark yellowish brown (10YR 4/6) clay films on faces of peds and coating fragments; 35 percent chert, shale, and siltstone fragments; moderately acid; clear smooth boundary.

Bt2—35 to 55 inches; dark yellowish brown (10YR 4/4) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; common faint dark yellowish brown (10YR 4/6) clay films on faces of peds; 30 percent chert, shale, and siltstone fragments; strongly acid; gradual wavy boundary.

C—55 to 80 inches; yellowish brown (10YR 5/4) very gravelly silty clay loam; massive; very friable; 60 percent chert, shale, and siltstone fragments; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert, shale, and siltstone
Reaction: Strongly acid to neutral

A horizon:
Hue—10YR
Value—3
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—15 to 35 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silt loam, loam, silty clay loam, or clay loam
Content of rock fragments—15 to 35 percent

C horizon:
Hue—10YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—silt loam, sandy loam, silty clay loam, or clay loam
Content of rock fragments—35 to 80 percent

Huntington Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Armour, Lindside, and Staser
Taxonomic class: Fine-silty, mixed, active, mesic Fluventic Hapludolls

Typical Pedon

Huntington silt loam, rarely flooded; 1.1 miles west from Celina on Tennessee Highway 53, about 6.9 miles north on Neely Creek Road, west across the bridge on Kettle Creek Road, 100 feet south of the

bridge; USGS Dale Hollow Dam Quadrangle; UTM coordinates: Easting 635146 Northing 4052185; lat. 36 degrees 36 minutes 26 seconds N. and long. 85 degrees 29 minutes 19 seconds W.

Ap—0 to 10 inches; dark brown (10YR 3/3) silt loam; weak medium granular structure; friable; common fine and very fine roots; neutral; clear smooth boundary.

BA—10 to 19 inches; dark brown (10YR 3/3) silty clay loam; weak medium subangular blocky structure; friable; few fine and very fine roots; slightly acid; clear smooth boundary.

Bw—19 to 41 inches; dark yellowish brown (10YR 3/4) silty clay loam; many fine faint dark yellowish brown (10YR 4/3) mottles; weak medium subangular blocky structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

BC—41 to 72 inches; dark yellowish brown (10YR 4/4) silty clay loam; common medium faint yellowish brown (10YR 5/4) mottles; weak coarse subangular blocky structure; friable; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert and shale
Reaction: Moderately acid to neutral

A horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 2 percent

BA horizon (if it occurs):
Hue—10YR
Value—3
Chroma—2 or 3
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 2 percent

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent

BC or C horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam, silty clay loam, loam, or fine sandy loam
Content of rock fragments—0 to 15 percent

Lee Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Hawthorne and Lobelville
Taxonomic class: Fine-loamy, siliceous, semiactive, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Lee gravelly silt loam, occasionally flooded; in Macon County, Tennessee; 1.5 miles west of Rocky Mound on Rocky Mound Road, 600 feet north on a gravel road, 100 feet west in a field; USGS Westmoreland Quadrangle; UTM coordinates: Easting 572435 Northing 4052230; lat. 36 degrees 36 minutes 43 seconds N. and long. 85 degrees 11 minutes 24 seconds W.

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) gravelly silt loam; moderate medium granular structure; friable; many fine and very fine roots; 20 percent rounded fragments of chert; moderately acid; abrupt smooth boundary.

Bg1—8 to 16 inches; light brownish gray (10YR 6/2) gravelly silt loam; weak fine subangular blocky structure; friable; common fine and very fine roots; few black (10YR 2/1) iron-manganese concretions; 20 percent rounded fragments of chert; strongly acid; clear smooth boundary.

Bg2—16 to 38 inches; gray (10YR 5/1) gravelly silt loam; weak medium subangular blocky structure; friable; common fine roots; few black (10YR 2/1) iron-manganese concretions; few medium distinct brown (10YR 4/3) iron accumulations; 20 percent rounded fragments of chert; strongly acid; gradual smooth boundary.

Cg—38 to 62 inches; gray (10YR 5/1) gravelly silt loam; massive; common fine roots; few black (10YR 2/1) iron-manganese concretions; few medium faint light brownish gray (10YR 6/2) iron depletions; common fine and medium distinct brown (10YR 4/3) iron accumulations; 30 percent rounded fragments of chert; strongly acid.

Figure 8.—Typical profile of Armour silt loam.

Figure 9.—Typical profile of Byler silt loam.

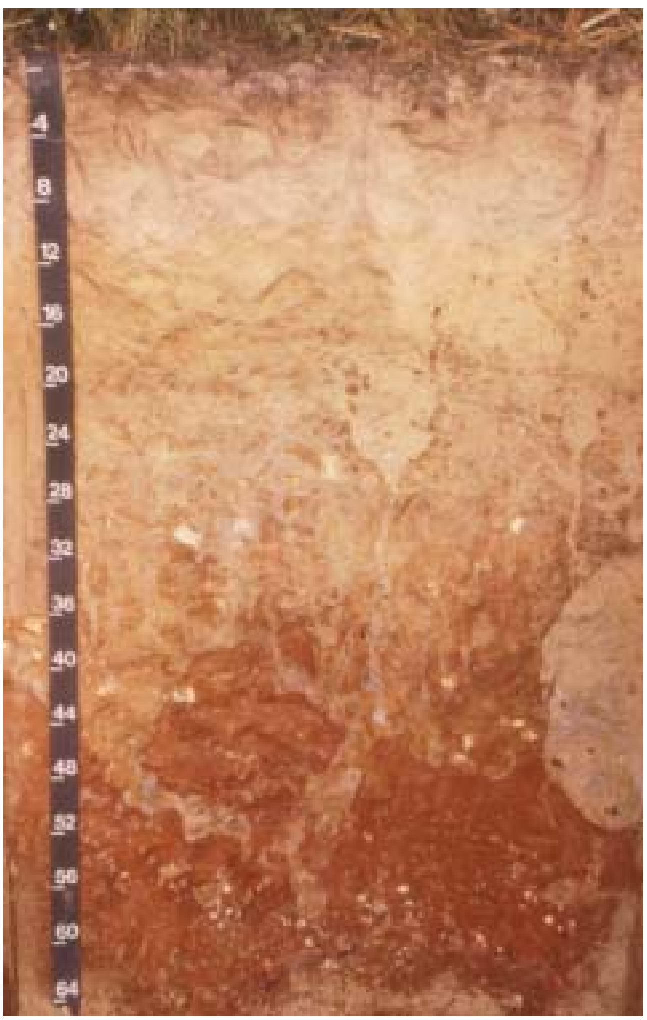

Figure 10.—Typical profile of Dickson silt loam.

Figure 11.—Typical profile of Frederick loam.

Figure 12.—Typical profile of Melvin silt loam.

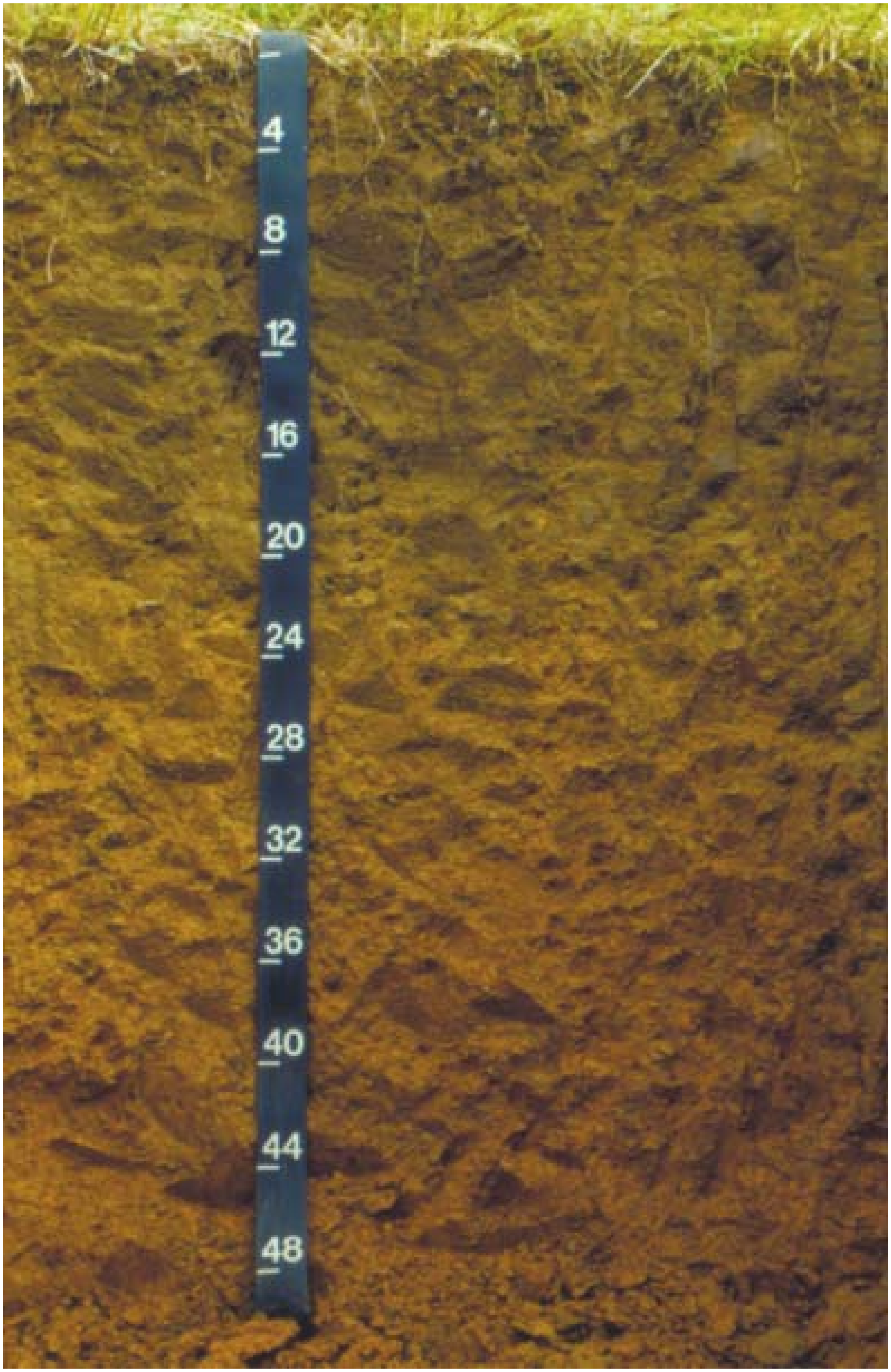

Figure 13.—Typical profile of Sullivan silt loam.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert and shale
Reaction: Very strongly acid to moderately acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture of fine-earth fraction—silt loam or loam
Redoximorphic features—common redoximorphic rhizospheres around roots
Content of rock fragments—5 to 25 percent

B horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of fine-earth fraction—silt loam or loam
Redoximorphic features—depleted or reduced matrix with iron accumulations in shades of brown, yellow, and red
Content of rock fragments—15 to 60 percent

C horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of fine-earth fraction—silt loam or loam
Redoximorphic features—depleted or reduced matrix
Content of rock fragments—25 to 60 percent

Lindside Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Arrington, Huntington, Melvin, and Ocana
Taxonomic class: Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts

Typical Pedon

Lindside silt loam, occasionally flooded; 1.1 miles northeast from Celina on Tennessee Highway 53, about 4.3 miles on Neely Creek Road, 550 feet west of the road in a field; USGS Celina Quadrangle; UTM coordinates: Easting 634097 Northing 4049531; lat. 36 degrees 34 minutes 55 seconds N. and long. 85 degrees 20 minutes 04 seconds W.

Ap—0 to 7 inches; dark yellowish brown (10YR 3/4) silt loam; moderate medium granular structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

Bw1—7 to 14 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

Bw2—14 to 40 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common fine and very fine roots; common medium faint grayish brown (10YR 5/2) iron depletions; slightly acid; clear smooth boundary.

BC—40 to 61 inches; dark yellowish brown (10YR 3/4) silty clay loam; weak coarse subangular blocky structure; friable; few fine and very fine roots; few soft black (10YR 2/1) iron-manganese accumulations; common medium distinct grayish brown (10YR 5/2) iron depletions; common medium distinct dark yellowish brown (10YR 4/6) iron accumulations; slightly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert and shale
Reaction: Moderately acid or slightly acid

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—few or common iron-manganese concentrations and common or many grayish iron depletions
Content of rock fragments—0 to 5 percent

BC or C horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture of fine-earth fraction—silt loam, silty clay loam, or gravelly silt loam
Redoximorphic features—few or common iron-manganese concentrations and many grayish iron depletions
Content of rock fragments—0 to 30 percent

Lobelville Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Monongahela, Ocana, and Sullivan
Taxonomic class: Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts

Typical Pedon

Lobelville loam, occasionally flooded; 1.7 miles southeast of Fairview, 1.6 miles south on Tennessee Highway 294, about 1.64 miles east of the intersection of Tennessee Highway 294 and Cleo Johnson Road, 20 feet north of the Overton County line and Ashburn Creek, in a field; USGS Dale Hollow Reservoir SE Quadrangle; UTM coordinates: Easting 6346720 Northing 4044469; lat. 36 degrees 31 minutes 55 seconds N. and long. 85 degrees 17 minutes 29 seconds W.

Ap—0 to 3 inches; dark yellowish brown (10YR 4/4) loam; moderate medium granular structure; friable; common fine and very fine roots; 5 percent chert and shale fragments; moderately acid; clear smooth boundary.
Bw—3 to 23 inches; dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common fine and very fine roots; 5 percent chert and shale fragments; moderately acid; clear smooth boundary.
Bg1—23 to 42 inches; grayish brown (10YR 5/2) gravelly silt loam; weak medium subangular blocky structure; friable; common fine and very fine roots; 20 percent chert and shale fragments; common medium distinct light brownish gray (10YR 6/2) iron depletions; moderately acid; clear smooth boundary.
Bg2—42 to 61 inches; gray (10YR 5/1) gravelly silt loam; weak medium subangular blocky structure; friable; 30 percent chert and shale fragments; common medium distinct grayish brown (10YR 5/2) iron depletions; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert and shale
Reaction: Strongly acid or moderately acid

A horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture of fine-earth fraction—loam
Content of rock fragments—5 to 25 percent

Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture of fine-earth fraction—loam or silt loam
Redoximorphic features—grayish iron depletions and iron-manganese concentrations
Content of rock fragments—5 to 25 percent

Bg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 or 2
Texture of fine-earth fraction—loam or silt loam
Redoximorphic features—iron-manganese concentrations
Content of rock fragments—10 to 30 percent

Cg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture of fine-earth fraction—loam, silt loam, or sandy loam
Redoximorphic features—iron-manganese concentrations
Content of rock fragments—10 to 30 percent

Lonewood Series

Depth class: Deep and very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Cumberland Plateau
Landform: Hillsides along the Kentucky State line
Parent material: Residuum from sandstone
Slope range: 6 to 25 percent
Associated soils: Caneyville, Christian, Garmon, and Newbern
Taxonomic class: Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Lonewood loam, 2 to 5 percent slopes; in Overton County, Tennessee; 0.4 mile north of Wilson School on Tennessee Highway 164, about 50 feet east of the road; USGS Obey Quadrangle; UTM coordinates: Easting 664730 Northing 4009785; lat. 36 degrees 13 minutes 08 seconds N. and long. 85 degrees 10 minutes 02 seconds W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; very friable; many very fine and fine roots; strongly acid; abrupt smooth boundary.

BE—4 to 9 inches; yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; very friable; common very fine and fine roots; few sandstone gravel; strongly acid; gradual smooth boundary.

Bt1—9 to 29 inches; dark yellowish brown (10YR 4/4) loam; moderate fine and medium subangular blocky structure; friable; few fine roots; few faint clay films on faces of peds; few sandstone gravel; strongly acid; clear wavy boundary.

2Bt2—29 to 45 inches; strong brown (7.5YR 4/6) clay loam; common fine and medium distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; strongly acid; gradual smooth boundary.

2BC—45 to 60 inches; yellowish red (5YR 5/6) sandy loam; common medium and coarse distinct yellowish brown (10YR 5/6) mottles; weak coarse subangular blocky structure; friable; strongly acid.

Range in Characteristics

Depth to bedrock: 40 to 72 inches
Kind of rock fragments: Sandstone gravel and shale channers
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of fine-earth fraction—loam or clay loam
Content of rock fragments—0 to 15 percent

2Bt horizon:
Hue—7.5YR or 5YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—sandy clay loam or clay loam
Content of rock fragments—0 to 30 percent

2BC and 2C horizons (if they occur):
Hue—10YR, 7.5YR, or 5YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—loam or sandy loam
Content of rock fragments—5 to 35 percent

Melvin Series

Depth class: Very deep
Drainage class: Poorly drained
Permeability: Moderate
Physiographic area: Highland Rim and Nashville Basin
Landform: Depressions and flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Lindside and Huntington
Taxonomic class: Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Melvin silt loam, occasionally flooded (fig. 12); in Overton County, Tennessee; 1.0 mile east of Hilham on Rocky Mound Road, 300 feet south in a field; USGS Hilham Quadrangle; UTM coordinates: Easting 54117 Northing 18709; lat. 36 degrees 18 minutes 04 seconds N. and long. 85 degrees 17 minutes 01 second W.

A—0 to 7 inches; grayish brown (10YR 5/2) silt loam; moderate medium granular structure; friable; common fine and very fine roots; common fine strong brown (7.5YR 5/6) iron concentrations; moderately acid; clear smooth boundary.

Bg1—7 to 20 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable; common fine roots; common fine strong brown (7.5YR 5/6) iron concentrations; moderately acid; clear smooth boundary.

Bg2—20 to 39 inches; gray (10YR 5/1) silt loam; weak medium subangular blocky structure; friable; few fine roots; common fine and medium strong brown (7.5YR 5/6) iron concentrations; moderately acid; gradual smooth boundary.

Cg—39 to 65 inches; light brownish gray (10YR 6/2) silty clay loam; massive; friable; few manganese concretions; many medium and coarse brownish yellow (10YR 6/8) iron concentrations; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert
Reaction: Moderately acid or slightly acid

A horizon:
Hue—10YR

Value—4 to 6
Chroma—1 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—few or common iron-manganese concentrations and common or many reddish iron concentrations
Content of rock fragments—0 to 5 percent

Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture of fine-earth fraction—silt loam, silty clay loam, or clay
Redoximorphic features—few or common iron-manganese concentrations and common or many reddish iron concentrations
Content of rock fragments—0 to 20 percent

Mimosa Series

Depth class: Deep
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Nashville Basin
Landform: Hillsides
Parent material: Limestone residuum
Slope range: 12 to 20 percent
Associated soils: Barfield, Dellrose, and Gladdice
Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludalfs

Typical Pedon

Mimosa silt loam, 12 to 20 percent slopes, eroded; 5.7 miles southwest of Celina on Tennessee Highway 53, about 3.0 miles southeast on Tennessee Highway 292, about 1.05 miles northeast of the intersection of Tennessee Highway 292 and Oil Hollow Road, 2,447 feet south into Muddy Hollow, in pasture; USGS Burristown Quadrangle; UTM coordinates: Easting 0634072 Northing 4037859; lat. 36 degrees 28 minutes 36 seconds N. and long. 85 degrees 30 minutes 12 seconds W.

A—0 to 11 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; friable; common medium and fine roots; 10 percent angular fragments of chert; moderately acid; clear smooth boundary.

Bt1—11 to 23 inches; dark yellowish brown (10YR 4/6) clay; moderate coarse subangular blocky structure; firm; moderately sticky; moderately plastic; few fine roots; common pressure faces throughout; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; strongly acid; clear smooth boundary.

Bt2—23 to 34 inches; yellowish brown (10YR 5/6) clay; moderate coarse subangular blocky structure; firm; very sticky; very plastic; common pressure faces on peds; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; many iron-manganese stains throughout; strongly acid; gradual smooth boundary.

Bt3—34 to 51 inches; yellowish brown (10YR 5/6) clay; many coarse light olive brown (2.5Y 5/6) and common fine light yellowish brown (2.5Y 6/4) mottles; weak coarse subangular blocky structure; firm; very sticky; very plastic; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; moderately acid; abrupt smooth boundary.

R—51 inches; hard limestone bedrock.

Range in Characteristics

Depth to bedrock: 40 to 60 inches
Kind of rock fragments: Chert
Reaction: Strongly acid or moderately acid

A horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—clay or silty clay
Content of rock fragments—0 to 5 percent

Minvale Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Hillsides and footslopes
Parent material: Colluvium or alluvium underlain by limestone residuum

Slope range: 2 to 20 percent
Associated soils: Etowah, Talbott, Sengtown, and Waynesboro
Taxonomic class: Fine-loamy, siliceous, subactive, thermic Typic Paleudults

Typical Pedon

Minvale gravelly loam, 5 to 12 percent slopes; in Overton County, Tennessee; 2 miles east of Rickman on Tennessee Highway 293, about 0.5 mile north on Oak Hill Road, 250 feet east of the road in woods; USGS Okalona Quadrangle; UTM coordinates: Easting 648525 Northing 4014025; lat. 36 degrees 15 minutes 35 seconds N. and long. 85 degrees 20 minutes 48 seconds W.

A1—0 to 3 inches; dark brown (10YR 3/3) gravelly loam; moderate medium granular structure; very friable; common fine and medium roots throughout; 15 percent chert fragments; strongly acid; clear smooth boundary.
A2—3 to 5 inches; dark yellowish brown (10YR 3/4) gravelly loam; moderate medium granular structure; friable; few fine and medium roots throughout; 15 percent chert fragments; strongly acid; clear smooth boundary.
BA—5 to 12 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak medium subangular blocky structure; friable; few very fine and fine roots throughout; 20 percent chert fragments; strongly acid; gradual smooth boundary.
Bt1—12 to 20 inches; brown (7.5YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots throughout; few faint discontinuous clay films on faces of peds; 20 percent chert fragments; strongly acid; gradual smooth boundary.
Bt2—20 to 48 inches; yellowish red (5YR 4/6) gravelly clay loam; moderate medium subangular blocky structure; friable; common faint discontinuous clay films on faces of peds; 30 percent chert fragments; strongly acid; gradual smooth boundary.
2Bt3—48 to 65 inches; red (2.5YR 4/6) very gravelly clay; strong fine and medium subangular blocky structure; firm; many distinct reddish brown (2.5YR 4/4) clay films on faces of peds; 40 percent chert fragments; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Sandstone and chert
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture of fine-earth fraction—loam
Content of rock fragments—10 to 35 percent

BA horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of fine-earth fraction—loam
Content of rock fragments—10 to 35 percent

Bt horizon:
Hue—10YR to 5YR
Value—4 or 5
Chroma—4 or 6
Texture of fine-earth fraction—loam, clay loam, or silty clay loam
Content of rock fragments—10 to 35 percent

2Bt horizon:
Hue—5YR or 2.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—clay
Content of rock fragments—15 to 45 percent

Monongahela Series

Depth class: Very deep
Drainage class: Moderately well drained
Permeability: Moderate above the fragipan and slow and very slow within the fragipan
Physiographic area: Highland Rim
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 12 percent
Associated soils: Lobelville, Sugargrove, and Trace
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Typic Fragiudults

Typical Pedon

Monongahela silt loam, 2 to 5 percent slopes, eroded; 4.8 miles west of Moss on Tennessee Highway 52, about 0.8 mile northeast of the intersection of Tennessee Highway 52 and Tennessee Highway 135, about 690 feet south of Tennessee Highway 52 in a field; USGS Union Hill Quadrangle; UTM coordinates: Easting 616602 Northing 4050859; lat. 36 degrees 35 minutes 46 seconds N. and long. 85 degrees 41 minutes 47 seconds W.

A—0 to 5 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; very friable;

many very fine roots; moderately acid; abrupt smooth boundary.

Bt1—5 to 24 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; strongly acid; clear smooth boundary.

Bt2—24 to 28 inches; light yellowish brown (10YR 6/4) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; common medium black (10YR 2/1) soft iron-manganese masses; common prominent light gray (10YR 7/1) iron depletions; very strongly acid; abrupt irregular boundary.

Btx1—28 to 50 inches; light olive brown (2.5Y 5/4) loam; moderate very coarse prismatic structure parting to strong very coarse platy; very firm; many distinct yellowish brown (10YR 5/6) clay films on faces of peds and in pores; common medium black (10YR 2/1) soft iron-manganese masses; common medium light gray (10YR 7/1) iron depletions; brittle in 90 percent of the horizon; very strongly acid; gradual wavy boundary.

Btx2—50 to 68 inches; light yellowish brown (2.5Y 6/4) gravelly loam; common medium distinct brownish yellow (10YR 6/6) mottles; moderate very coarse prismatic structure parting to moderate very coarse platy; very firm; many distinct yellowish brown (10YR 5/6) clay films on faces of peds and in pores; common medium black (10YR 2/1) soft iron-manganese masses; common medium light gray (10YR 7/1) iron depletions; brittle in 80 percent of the horizon; very strongly acid; clear smooth boundary.

BC—68 to 80 inches; brownish yellowish (10YR 6/6) gravelly loam; weak very coarse platy structure; firm; many medium black (10YR 2/1) soft iron-manganese masses; common prominent light gray (10YR 7/1) iron depletions; common prominent yellowish red (5YR 5/6) iron accumulations; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Depth to fragipan: 20 to 30 inches
Kind of rock fragments: Chert and siltstone
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—less than 5 percent

Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—silt loam
Redoximorphic features—few or common iron-manganese nodules, concretions, and grayish iron depletions
Content of rock fragments—less than 5 percent

Btx horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture of fine-earth fraction—silt loam, loam, or clay loam
Redoximorphic features—few or common soft iron-manganese masses and grayish iron depletions
Content of rock fragments—less than 35 percent

2Bt horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 8
Texture of fine-earth fraction—silty clay loam or clay loam
Redoximorphic features—few or common soft iron-manganese masses and grayish iron depletions
Content of rock fragments—less than 35 percent

BC horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—2 to 8
Texture of fine-earth fraction—loam, sandy loam, or clay loam
Redoximorphic features—few or common soft iron-manganese masses and grayish iron depletions
Content of rock fragments—10 to 35 percent

Mountview Series

Depth class: Very deep
Drainage class: Well drained and moderately well drained
Permeability: Moderately slow at the discontinuity
Physiographic area: Highland Rim
Landform: Divides
Parent material: Loess over residuum or alluvium
Slope range: 2 to 12 percent
Associated soils: Bewleyville, Dickson, Frederick, and Sugargrove

Taxonomic class: Fine-silty, siliceous, semiactive, thermic Oxyaquic Paleudults

Typical Pedon

Mountview silt loam, 5 to 12 percent slopes, eroded; 7.8 miles northeast of Moss, 3.2 miles northwest on Clementsville Road from its intersection with Tennessee Highway 52 at Oak Grove, 0.45 mile south on Ritter Road, 370 feet east in a field; USGS Union Hill Quadrangle; UTM coordinates: Easting 612606 Northing 4052515; lat. 36 degrees 36 minutes 41 seconds N. and long. 85 degrees 44 minutes 27 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 21 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; few faint clay films on faces of peds and in pores; slightly acid; clear wavy boundary.

Bt2—21 to 28 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots; firm; few faint clay films on faces of peds and in pores; common coarse black (10YR 2/1) manganese concretions; common medium pale brown (10YR 6/3) iron depletions; 3 percent chert fragments; brittle in 15 to 20 percent of the horizon; slightly acid; clear wavy boundary.

2Bt3—28 to 34 inches; strong brown (7.5YR 5/6) silty clay loam; many medium distinct yellowish red (5YR 5/6) and common fine prominent light yellowish brown (10YR 6/4) mottles; moderate fine subangular blocky structure; friable; common very fine and fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds and in pores; common black (10YR 2/1) soft iron-manganese masses on faces of peds; 2 percent subangular chert fragments; strongly acid; gradual smooth boundary.

2Bt4—34 to 45 inches; yellowish red (5YR 5/6) silty clay loam; common fine prominent light yellowish brown (10YR 6/4) and common medium distinct reddish yellow (7.5YR 6/6) mottles; moderate fine angular blocky structure; friable; common very fine and fine roots; many distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; few fine light gray (10YR7/2) iron depletions; 1 percent chert fragments; strongly acid; clear wavy boundary.

2Bt5—45 to 80 inches; red (2.5YR 4/6) clay; common fine and medium prominent brownish yellow (10YR 6/8) and common fine and medium prominent reddish yellow (7.5YR 6/6) mottles; strong medium subangular blocky structure; firm; very few very fine and fine roots; many distinct yellowish red (5YR 5/6) clay films on faces of peds and in pores; few fine light gray (10YR 7/2) iron depletions; 2 percent subangular chert fragments; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Depth to brittle zone (if it occurs): 18 to 36 inches
Kind of rock fragments: Chert and siltstone
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silt loam or silty clay loam
Redoximorphic features—few or common iron-manganese nodules and grayish iron depletions
Content of rock fragments—0 to 5 percent

2Bt horizon:
Hue—2.5YR, 5YR, or 7.5YR
Value—4 or 5
Chroma—6 to 8
Texture of fine-earth fraction—silty clay loam, silty clay, or clay
Content of rock fragments—0 to 35 percent

Newbern Series

Depth class: Shallow
Drainage class: Somewhat excessively drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Narrow ridges and hillsides
Parent material: Residuum from calcareous shale
Slope range: 5 to 80 percent
Associated soils: Garmon
Taxonomic class: Loamy, mixed, active, mesic Lithic Eutrudepts

Typical Pedon

Newbern channery silt loam in an area of Newbern-Garmon complex, 30 to 80 slopes; in Overton County, Tennessee; 0.7 mile southeast of Livingston Boat Dock, 850 feet north of Livingston Boat Dock Road; USGS Dale Hollow Dam, TN-KY Quadrangle; UTM coordinates: Easting 645230 Northing 4042265; lat. 36 degrees 30 minutes 53 seconds N. and long. 85 degrees 22 minutes 41 seconds W.

Oi—1 inch to 0; slightly decomposed and fresh leaf litter.
A—0 to 1 inch; dark grayish brown (10YR 4/2) channery silt loam; moderate fine and medium granular structure; friable; common fine and very fine and few medium roots; 20 percent shale channers; slightly acid; clear smooth boundary.
BA—1 to 3 inches; brown (10YR 4/3) channery silt loam; weak medium subangular blocky structure; friable; common fine and very fine roots; 20 percent shale channers; slightly acid; clear smooth boundary.
Bw1—3 to 10 inches; yellowish brown (10YR 5/6) channery silt loam; moderate medium subangular blocky structure; friable; common fine and very fine roots; 20 percent shale channers; moderately acid; gradual smooth boundary.
Bw2—10 to 14 inches; yellowish brown (10YR 5/6) very channery silt loam; weak medium subangular blocky structure; friable; few fine and very fine roots; 40 percent shale channers; slightly acid; abrupt wavy boundary.
Cr—14 to 18 inches; highly fractured shale that has thin seams of yellowish brown (10YR 5/6) silt loam.
R—18 inches; black calcareous shale bedrock.

Range in Characteristics

Depth to bedrock: 10 to 20 inches
Kind of rock fragments: Shale
Reaction: Moderately acid to neutral

A horizon:
Hue—10YR
Value—3 to 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 35 percent

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—10 to 35 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 8
Texture of fine-earth fraction—silt loam or loam
Content of rock fragments—0 to 50 percent

C horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—6 or 8
Texture of fine-earth fraction—silt loam or loam
Content of rock fragments—0 to 65 percent

Nolin Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Armour, Lindside, and Ocana
Taxonomic class: Fine-silty, mixed, active, mesic Dystric Fluventic Eutrudepts

Typical Pedon

Nolin silt loam, occasionally flooded; 0.55 mile northwest of Celina on Tennessee Highway 52, about 1,200 feet northeast of the road in a field; USGS Celina Quadrangle; UTM coordinates: Easting 632643 Northing 4047141; lat. 36 degrees 33 minutes 38 seconds N. and long. 85 degrees 31 minutes 04 seconds W.

Ap—0 to 14 inches; brown (10YR 4/3) silt loam; weak fine granular structure; very friable; common fine and very fine roots; slightly acid; clear smooth boundary.
Bw1—14 to 30 inches; dark brown (10YR 3/3) silty clay loam; weak medium subangular blocky structure; friable; few fine and very fine roots; few black (10YR 2/1) iron-manganese concretions throughout; moderately acid; gradual smooth boundary.
Bw2—30 to 44 inches; dark yellowish brown (10YR 3/4) silty clay loam; weak medium subangular blocky structure; friable; few black (10YR 2/1) iron-manganese concretions throughout; neutral; clear smooth boundary.
Bw3—44 to 62 inches; dark yellowish brown (10YR 3/4) silty clay loam; common faint dark yellowish brown 10YR 4/4) mottles; weak medium subangular blocky structure; friable; few black

(10YR 2/1) iron-manganese concretions throughout; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert and shale
Reaction: Moderately acid to neutral

A horizon:
Hue—10YR
Value—3 or 4
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR
Value—3 to 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—0 to 5 percent

Ocana Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately rapid
Physiographic area: Highland Rim and Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Humphreys, Lobelville, Nolin, Renox, and Skidmore
Taxonomic class: Fine-loamy, mixed, active, thermic Dystric Fluventic Eutrudepts

Typical Pedon

Ocana gravelly silt loam, occasionally flooded; in Jackson County, Tennessee; 0.5 mile west of North Springs, 1.1 miles southeast of the intersection of Long Hollow Road and Hudson Creek Road, 0.3 mile northwest of the intersection of Tennessee Highway 56 and Hudson Creek Road, 400 feet northeast of Hudson Creek Road in pasture; USGS Willette Quadrangle; UTM coordinates: Easting 610875 Northing 4036223; lat. 36 degrees 27 minutes 54 seconds N. and long. 85 degrees 45 minutes 45 seconds W.

Ap—0 to 7 inches; brown (10YR 4/3) gravelly silt loam; weak fine granular structure; very friable; many fine and very fine roots; 15 percent rounded chert fragments; slightly acid; clear smooth boundary.

Bw1—7 to 17 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; weak fine and medium subangular blocky structure; very friable; common fine roots; 20 percent rounded chert fragments; slightly acid; clear wavy boundary.

Bw2—17 to 36 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak medium subangular blocky structure; friable; few very fine roots; 20 percent rounded chert fragments; slightly acid; clear wavy boundary.

Bw3—36 to 48 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; weak medium subangular blocky structure; friable; 30 percent rounded chert fragments; slightly acid; gradual wavy boundary.

C—48 to 65 inches; brown (10YR 4/3) very gravelly loam; massive; friable; 55 percent rounded chert fragments; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert and shale
Reaction: Moderately acid to neutral

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—15 to 35 percent

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam, loam, or clay loam
Content of rock fragments—15 to 35 percent

C horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam, loam, clay loam, or sandy loam
Content of rock fragments—15 to 60 percent

Renox Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Footslopes, fans, and stream terraces
Parent material: Alluvium or colluvium from cherty limestone, siltstone, and shale

Slope range: 2 to 12 percent
Associated soils: Dellrose, Garmon, Gladdice, Mimosa, and Newbern
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Ultic Hapludalfs

Typical Pedon

Renox silt loam, 2 to 5 percent slopes; 1.0 mile west of Celina on Tennessee Highway 52, about 1.2 miles north on Proctor Road, 130 feet northwest of the road; USGS Celina Quadrangle; UTM coordinates: Easting 632190 Northing 4048691; lat. 36 degrees 34 minutes 28 seconds N. and long. 85 degrees 31 minutes 21 seconds W.

Ap—0 to 10 inches; dark yellowish brown (10YR 3/4) silt loam; moderate medium granular structure; friable; many fine and very fine roots; 5 percent fragments of chert; slightly acid; clear smooth boundary.
Bt1—10 to 26 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; 5 percent fragments of chert; slightly acid; clear smooth boundary.
Bt2—26 to 42 inches; dark yellowish brown (10YR 4/6) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; 20 percent fragments of chert; moderately acid; gradual smooth boundary.
Bt3—42 to 65 inches; yellowish brown (10YR 5/6) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; 20 percent fragments of chert; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert and siltstone
Reaction: Neutral to moderately acid

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—5 to 30 percent

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—5 to 35 percent

Sengtown Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderately slow and slow
Physiographic area: Highland Rim
Landform: Hills
Parent material: Residuum from cherty limestone
Slope range: 5 to 40 percent
Associated soils: Christian and Mountview
Taxonomic class: Fine, mixed, semiactive, thermic Typic Paleudalfs

Typical Pedon

Sengtown cobbly loam, 20 to 35 percent slopes; in Overton County, Tennessee; 0.1 mile north of Palestine Road on Livingston Boat Dock Road, east side of the road in a wooded area; USGS Livingston Quadrangle; UTM coordinates: Easting 646475 Northing 4039350; lat. 36 degrees 29 minutes 18 seconds N. and long. 85 degrees 21 minutes 53 seconds W.

A—0 to 3 inches; brown (10YR 4/3) cobbly loam; fine granular structure; very friable; common very fine and fine roots; 15 percent cobbles and 15 percent chert gravel; strongly acid; abrupt smooth boundary.
E—3 to 15 inches; light yellowish brown (10YR 6/4) cobbly loam; weak fine and medium subangular blocky structure; very friable; common fine and few medium roots; 15 percent cobbles and 15 percent chert fragments; strongly acid; clear wavy boundary.
Bt1—15 to 20 inches; yellowish red (5YR 5/8) gravelly silty clay loam; moderate medium subangular blocky structure; friable; few fine and medium roots; few distinct yellowish red (5YR 5/6) clay films on faces of peds; 25 percent chert fragments; strongly acid; gradual smooth boundary.
Bt2—20 to 48 inches; red (2.5YR 4/8) gravelly clay; strong fine and medium angular blocky structure; firm; few fine roots; many distinct red (2.5YR 4/6) clay films on faces of peds; 20 percent chert fragments; very strongly acid; gradual smooth boundary.
Bt3—48 to 70 inches; red (2.5YR 5/8) gravelly clay; common fine prominent strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; firm; common distinct red (2.5YR 4/6) clay films on faces of peds; 15 percent chert fragments; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Kind of rock fragments: Angular chert
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 6
Texture of fine-earth fraction—loam
Content of rock fragments—15 to 35 percent

E horizon:
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—15 to 35 percent

Bt horizon:
Hue—5YR or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture of fine-earth fraction—typically clay; the upper part of the horizon includes silty clay loam
Content of rock fragments—15 to 35 percent

Skidmore Series

Depth class: Deep
Drainage class: Well drained
Permeability: Moderately rapid
Physiographic area: Highland Rim and Nashville Basin
Landform: Flood plains
Parent material: Gravelly alluvium
Slope range: 0 to 2 percent
Associated soils: Dellrose, Humphreys, and Ocana
Taxonomic class: Loamy-skeletal, mixed, semiactive, mesic Dystric Fluventic Eutrudepts

Typical Pedon

Skidmore gravelly loam, occasionally flooded; in Jackson County, Tennessee; 2.2 miles northwest of the intersection of Tennessee Highway 151 and Tennessee Highway 56, about 3.6 miles north of the intersection of Tennessee Highway 56 and Ward Fork Road, 2.5 miles northwest of the intersection of Tennessee Highway 56 and Crabtree Creek Road, 221 feet east of Tennessee Highway 151, in pasture; USGS Willette Quadrangle; UTM coordinates: Easting 609422 Northing 4039154; lat. 36 degrees 29 minutes 29 seconds N. and long. 85 degrees 46 minutes 42 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) gravelly loam; moderate medium granular structure; very friable; many fine and very fine roots; 35 percent rounded chert fragments; slightly acid; clear wavy boundary.

Bw1—10 to 19 inches; brown (10YR 4/3) very gravelly coarse sandy loam; moderate medium granular structure; very friable; common fine and very fine roots; 50 percent rounded chert fragments; slightly acid; clear wavy boundary.

Bw2—19 to 24 inches; brown (10YR 4/3) very gravelly clay loam; weak medium subangular blocky structure; friable; few very fine roots; 45 percent rounded chert fragments; slightly acid; clear wavy boundary.

CB—24 to 32 inches; brown (10YR 4/3) extremely gravelly clay loam; weak medium subangular blocky structure; friable; 70 percent rounded chert fragments; slightly acid; gradual wavy boundary.

C1—32 to 48 inches; brown (10YR 4/3) extremely gravelly coarse sandy loam; massive; very friable; 70 percent rounded chert fragments; neutral; gradual wavy boundary.

C2—48 to 65 inches; dark yellowish brown (10YR 4/4) extremely gravelly coarse sandy loam; massive; very friable; 70 percent rounded chert fragments; neutral.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Rounded chert and shale
Reaction: Moderately acid to neutral

A horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—loam
Content of rock fragments—15 to 50 percent

Bw horizon:
Hue—10YR
Value—4 or 6
Chroma—3 to 6
Texture of fine-earth fraction—loam, clay loam, or sandy loam
Content of rock fragments—15 to 50 percent

CB horizon:
Hue—10YR
Value—4 or 6
Chroma—3 to 6
Texture of fine-earth fraction—loam, clay loam, or sandy loam
Content of rock fragments—35 to 90 percent

C horizon:
Hue—10YR
Value—4 or 6
Chroma—3 to 6
Texture of fine-earth fraction—loam, clay loam, or sandy loam
Content of rock fragments—35 to 90 percent

Staser Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Nashville Basin
Landform: Flood plains
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Armour, Arrington, Huntington, and Lindside
Taxonomic class: Fine-loamy, mixed, active, thermic Cumulic Hapludolls

Typical Pedon

Staser fine sandy loam, rarely flooded; 1.35 miles north of Celina from the intersection of Tennessee Highway 52 and Proctor Creek Road, 0.7 mile northeast on Proctor Creek Road, 1.1 miles east on Old Stone Road, 750 feet east of the road in a field; USGS Celina Quadrangle; UTM coordinates: Easting 633863 Northing 4048249; lat. 36 degrees 34 minutes 13 seconds N. and long. 85 degrees 30 minutes 14 seconds W.

Ap—0 to 13 inches; dark brown (10YR 3/3) fine sandy loam; weak fine granular structure; very friable; many fine and very fine roots; slightly acid; clear smooth boundary.
Bw1—13 to 24 inches; dark brown (10YR 3/3) loam; few medium faint dark yellowish brown (10YR 3/4) mottles; moderate medium subangular blocky structure; friable; common fine and very fine roots; moderately acid; gradual smooth boundary.
Bw2—24 to 40 inches; dark yellowish brown (10YR 3/4) loam; moderate medium subangular blocky structure; friable; few fine roots; moderately acid; gradual smooth boundary.
Bw3—40 to 61 inches; dark yellowish brown (10YR 4/6) loam; weak medium subangular blocky structure; friable; moderately acid; gradual smooth boundary.
Bw4—61 to 88 inches; dark yellowish brown (10YR 4/4) loam; few medium distinct light yellowish brown (10YR 6/4) mottles; weak coarse subangular blocky structure; friable; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Well rounded chert, sandstone, and shale
Reaction: Slightly acid or moderately acid

A horizon:
Hue—10YR
Value—3
Chroma—2 or 3
Texture of fine-earth fraction—fine sandy loam
Content of rock fragments—0 to 5 percent

Bw horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—fine sandy loam or loam
Content of rock fragments—0 to 5 percent

C horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—fine sandy loam or loam
Content of rock fragments—0 to 15 percent

Sugargrove Series

Depth class: Moderately deep and deep
Drainage class: Well drained
Permeability: Moderate and moderately rapid
Physiographic area: Highland Rim
Landform: Ridges
Parent material: Residuum
Slope range: 2 to 20 percent
Associated soils: Hawthorne and Mountview
Taxonomic class: Fine-loamy, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded; 3.6 miles south of Hermitage Springs, 6.4 miles south of the intersection of Bakerton Road and Tennessee Highway 52, about 0.5 mile north on Duel Davis Road to a barn, 500 feet north in pasture; USGS Red Boiling Springs Quadrangle; UTM coordinates: Easting 609668 Northing 4043232; lat. 36 degrees 31 minutes 41 seconds N. and long. 85 degrees 46 minutes 30 seconds W.

A—0 to 7 inches; brown (10YR 5/3) gravelly silt loam; moderate medium granular structure; friable; common very fine to medium roots throughout; 16 percent subangular chert fragments; neutral; clear wavy boundary.

Bt1—7 to 12 inches; yellowish brown (10YR 5/6) gravelly silt loam; moderate fine subangular blocky structure; friable; common fine and medium roots throughout; few faint clay films on faces of peds; 15 percent chert fragments; moderately acid; clear smooth boundary.

Bt2—12 to 24 inches; strong brown (7.5YR 5/6) channery silt loam; moderate fine subangular blocky structure; friable; common very fine and fine roots throughout; common distinct brown (7.5YR 5/4) clay films on faces of peds and in pores; 15 percent chert fragments; strongly acid; clear smooth boundary.

Bt/C—24 to 36 inches; strong brown (7.5YR 5/6) very channery silty clay loam (Bt part) and light yellowish brown (10YR 6/4) silt loam (C part); few fine prominent yellowish red (5YR 5/6), red (2.5YR 4/6), and white (10YR 8/1) mottles; moderate fine subangular blocky structure in Bt part; very thick and thick platy structure in C part; firm; common distinct brown (7.5YR 5/4) clay films on faces of peds; 45 percent channers of siltstone; strongly acid; abrupt smooth boundary.

Cr—36 inches; horizontally bedded, weathered siltstone that is 1 to 2 inches thick; fractures that run vertical and are 3 to 10 inches apart; thin seams of silty clay loam between strata.

Range in Characteristics

Depth to bedrock: 20 to 60 inches
Kind of rock fragments: Chert and siltstone
Reaction: Very strongly acid or strongly acid

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—15 to 30 percent

Bt horizon (upper part):
Hue—10YR or 7.5YR
Value—5 or 6
Chroma—4 to 6
Texture of fine-earth fraction—silt loam or silty clay loam
Content of rock fragments—15 to 35 percent

Bt horizon (lower part):
Hue—5YR, 7.5YR, or 10YR
Value—4 or 6
Chroma—4 to 8
Texture of fine-earth fraction—silt loam, silty clay loam, or, rarely, clay
Content of rock fragments—15 to 60 percent

C horizon (if it occurs):
Hue—5YR, 7.5YR, or 10YR
Value—4 or 6
Chroma—3 to 8
Texture of fine-earth fraction—silt loam, silty clay loam, or clay
Content of rock fragments—15 to 60 percent

Sullivan Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Flood plains and bottoms of depressions
Parent material: Alluvium
Slope range: 0 to 2 percent
Associated soils: Bewleyville, Christian, Etowah, Lobelville, and Waynesboro
Taxonomic class: Fine-loamy, siliceous, active, thermic Dystric Fluventic Eutrudepts

Typical Pedon

Sullivan silt loam, occasionally flooded (fig. 13); in Overton County, Tennessee; 1.0 mile north of Rickman on Tennessee Highway 42, about 600 feet east in a field; USGS Okalona Quadrangle; UTM coordinates: Easting 646800 Northing 4015500; lat. 36 degrees 16 minutes 24 seconds N. and long. 85 degrees 21 minutes 56 seconds W.

A—0 to 5 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common fine and very fine roots; moderately acid; clear smooth boundary.

Bw—5 to 26 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; few fine black (10YR 2/1) manganese concretions; strongly acid; gradual smooth boundary.

Ab—26 to 32 inches; dark brown (10YR 3/3) loam; weak medium subangular blocky structure; friable; few fine roots; few fine black (10YR 2/1) manganese concretions; strongly acid; gradual smooth boundary.

Bwb—32 to 62 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; few fine black (10YR 2/1) manganese concretions; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert and sandstone
Reaction: Strongly acid or moderately acid

A and Ab horizons:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture of fine-earth fraction—silt loam
Redoximorphic features—few or common manganese concretions
Content of rock fragments—0 to 15 percent

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture of fine-earth fraction—silt loam or loam
Redoximorphic features—few or common manganese concretions
Content of rock fragments—0 to 15 percent

Talbott Series

Depth class: Moderately deep
Drainage class: Well drained
Permeability: Slow and very slow
Physiographic area: Highland Rim
Landform: Hillsides
Parent material: Residuum from limestone
Slope range: 10 to 40 percent
Associated soils: Caneyville, Christian, and Faywood
Taxonomic class: Fine, mixed, semiactive, thermic Typic Hapludalfs

Typical Pedon

Talbott silty clay loam in an area of Talbott-Rock outcrop complex, 20 to 40 percent slopes; in Overton County, Tennessee; 5.3 miles southeast of Rickman, 270 feet east of the intersection of Tennessee Highway 293 and Tennessee Highway 84, about 180 feet northeast of the intersection of Dry Hollow Road and Tennessee Highway 84, in woods; USGS Monterey Quadrangle; UTM coordinates: Easting 653393 Northing 4011381; lat. 36 degrees 14 minutes 07 seconds N. and long. 85 degrees 17 minutes 35 seconds W.

A—0 to 5 inches; dark brown (7.5YR 3/2) silty clay loam; strong medium granular structure; friable; moderately acid; clear smooth boundary.

Bt1—5 to 25 inches; red (2.5YR 4/8) clay; strong fine angular blocky structure; firm; moderately sticky; moderately plastic; many prominent red (2.5YR 4/6) clay films throughout; moderately acid; gradual smooth boundary.

Bt2—25 to 33 inches; red (2.5YR 4/6) clay; moderate fine angular blocky structure; firm; very sticky; very plastic; many prominent reddish brown (2.5YR 4/4) clay films throughout; common fine black (10YR 2/1) irregular masses of manganese accumulations throughout; moderately acid; abrupt wavy boundary.

R—33 inches; hard, pinnacle-shaped limestone bedrock.

Range in Characteristics

Depth to bedrock: 20 to 40 inches
Kind of rock fragments: Limestone flagstones and chert gravel in the upper part of the profile
Reaction: Generally moderately acid or strongly acid; the layer directly above bedrock ranges to neutral

A horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—2 to 4
Texture of fine-earth fraction—silty clay loam or loam
Content of rock fragments—typically less than 10 percent; in some pedons, the horizon formed in loamy colluvium and has 5 to 20 percent rock fragments

E horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—4
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 20 percent

Bt horizon:
Hue—7.5YR to 2.5YR
Value—4 or 5
Chroma—4 to 8
Texture of fine-earth fraction—clay
Content of rock fragments—0 to 10 percent

C horizon (if it occurs):
Hue—2.5YR or 5YR
Value—4 to 6
Chroma—4 to 8
Texture of fine-earth fraction—clay
Content of rock fragments—less than 10 percent

Trace Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate to rapid

Physiographic area: Highland Rim
Landform: Stream terraces and footslopes
Parent material: Alluvium and colluvium
Slope range: 2 to 12 percent
Associated soils: Lobelville, Monongahela, and Sullivan
Taxonomic class: Fine-silty, mixed, semiactive, thermic Ultic Hapludalfs

Typical Pedon

Trace silt loam, 2 to 5 percent slopes; 5.0 miles west of Moss on Tennessee Highway 52, about 1.04 miles north of the intersection of Tennessee Highway 52 and Clementsville Road, 1,614 feet northwest of the intersection of Gulley Road and Clementsville Road, in a field; USGS Union Hill Quadrangle; UTM coordinates: Easting 615074 Northing 4063027; lat. 36 degrees 36 minutes 33 seconds N. and long. 85 degrees 42 minutes 45 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many fine and very fine roots; neutral; abrupt smooth boundary.

BA—9 to 16 inches; brown (7.5YR 4/4) silt loam; moderate fine subangular blocky structure; friable; common fine and very fine roots; slightly acid; clear smooth boundary.

Bt1—16 to 25 inches; strong brown (7.5YR 4/6) silt loam; moderate fine subangular blocky structure; friable; common fine and very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few very fine black (10YR 2/1) manganese nodules; slightly acid; clear smooth boundary.

Bt2—25 to 43 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; friable; common fine and very fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few very fine black (10YR 2/1) manganese nodules; moderately acid; clear smooth boundary.

Bt3—43 to 55 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; friable; few fine and very fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few very fine black (10YR 2/1) manganese nodules; 10 percent subrounded siltstone and chert gravel; moderately acid; gradual smooth boundary.

2BC—55 to 61 inches; yellowish brown (10YR 5/4) gravelly loam; massive; very friable; few very fine black (10YR 2/1) manganese nodules; common fine distinct strong brown (7.5YR 4/6) iron concentrations; few fine distinct pale brown (10YR 6/3) iron depletions; 30 percent rounded siltstone and chert gravel; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Siltstone and chert
Reaction: Strongly acid to slightly acid

A horizon:
Hue—10YR
Value—4
Chroma—3 or 4
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent

BA horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—silt loam
Content of rock fragments—0 to 10 percent

Bt horizon:
Hue—10YR to 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture of fine-earth fraction—silt loam, silty clay loam, or clay loam
Redoximorphic features—few or common iron-manganese nodules
Content of rock fragments—0 to 10 percent

2BC horizon:
Hue—10YR
Value—5
Chroma—3 to 6
Texture of fine-earth fraction—sandy loam or loam
Redoximorphic features—few or common iron-manganese concretions and nodules
Content of rock fragments—15 to 60 percent

Waynesboro Series

Depth class: Very deep
Drainage class: Well drained
Permeability: Moderate
Physiographic area: Highland Rim
Landform: Terraces
Parent material: Alluvium
Slope range: 2 to 20 percent
Associated soils: Christian, Dickson, Etowah, and Mountview
Taxonomic class: Fine, kaolinitic, thermic Typic Paleudults

Typical Pedon

Waynesboro loam, 5 to 12 percent slopes; in Overton County, Tennessee; 3.1 miles south of Livingston, 1.25 miles southeast from the intersection of Highway 84 and Rickman Road, 1.0 mile southeast of the intersection of Rickman Road and Bilbrey Road, 10 feet west of the road in pasture; USGS Okalona Quadrangle; UTM coordinates: Easting 650640 Northing 4020180; lat. 36 degrees 20 minutes 0.9 second N. and long. 85 degrees 19 minutes 30 seconds W.

A—0 to 5 inches; strong brown (7.5YR 4/6) loam; moderate medium granular structure; friable; common fine and medium roots; strongly acid; clear wavy boundary.

Bt1—5 to 21 inches; red (2.5YR 4/8) clay; moderate fine and medium angular blocky structure; firm; few fine and medium roots; common distinct strong brown (7.5YR 4/6) clay films on faces of peds and in pores; strongly acid; gradual smooth boundary.

Bt2—21 to 42 inches; dark red (2.5YR 3/6) clay; strong fine and medium angular blocky structure; firm; few fine and medium roots; common distinct dark reddish brown (2.5YR 3/4) clay films on faces of peds and in pores; strongly acid; gradual smooth boundary.

Bt3—42 to 68 inches; dark red (2.5YR 4/8) clay; common medium prominent yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; firm; common distinct yellowish red (5YR 4/6) clay films on faces of peds and in pores; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Kind of rock fragments: Chert gravel and rounded quartzite pebbles
Reaction: Strongly acid or very strongly acid

A horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture of fine-earth fraction—loam
Content of rock fragments—0 to 15 percent

Bt horizon (upper part):
Hue—7.5YR or 2.5YR
Value—4 or 5
Chroma—6 or 8
Texture of fine-earth fraction—clay loam or clay
Content of rock fragments—0 to 10 percent

Bt horizon (lower part):
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—6 or 8
Texture of fine-earth fraction—clay
Content of rock fragments—0 to 10 percent

Formation of Soils

This section discusses the five factors of soil formation—time, climate, living organisms, parent material, and topography. The combined influence of these factors determines the characteristics and properties of a soil. The section also discusses the geology and landforms of the survey area.

Factors of Soil Formation

Time, Climate, and Living Organisms

Some 25,000 years ago, climatic conditions in the survey area were very different from those of today. The Wisconsin Glacial maximum was reaching its end. The warming trend that followed would end the Pleistocene ice age. As the early Holocene epoch arrived, the local plant communities were very different than those of today *(7)*. Research published by E. Lucy Braun in 1950 and later recompiled by Hazel R. Delcourt was based on sediment from pond-like depressions around the Highland Rim of Tennessee. Plant pollen radiocarbon dates from the early Holocene epoch show that the dominant vegetation included jack pine, spruce, and fir. Sometime between 12,500 and 8,000 years ago, the boreal forest died off and a new species, such as oak and hickory, became dominant. Soil scientists believe that there must have been a time of greatly accelerated erosional processes in this region because of the many water-worked deposits found on old terraces and on footslopes. The study seemed to confirm this, showing deposition rates into the pond were far greater until 12,000 years ago. Several feet of loess were also deposited at this time. The glaciers near present-day Indiana, Illinois, and Ohio left large amounts of unvegetated debris which were carried off by the wind. It is believed that most of the alluvial and colluvial soils in the survey area developed at this time. Waynesboro soils possibly formed during the Pleistocene epoch. There are 29 soil series in Clay County that formed in transported materials. Areas of these soils comprise almost 20 percent of the survey area.

Today, there are also other important processes of soil formation occurring on a smaller scale. Trees with their roots bound into the bedrock die or fall over, thus dragging bedrock and subsoil material to the surface. The tipping over of trees is very common, especially in steep areas. In some areas of Clay County, there are dozens of tipped over trees per acre. These areas have probably been upturned several thousand times, showing the importance of time as a soil-forming factor. Plant communities, such as cane breaks or meadows, are known to develop unique soils.

Parent Material and Topography

Water is the primary force behind most soil evolution. Generally, it is affected the most by topography and geologic layers. Most landscapes in Clay County can be explained by differential weathering. Some types of bedrock, such as limestone and calcareous shale, can be chemically weathered while sandstone cannot *(5)*. Not all limestones are pure calcium carbonate. Dirty limestones have high percentages of chert, silicon sand, or other impurities. Chemical weathering occurs when rainfall, being naturally slightly acid, falls and dissolves pure calcium carbonate from the bedrock. Over time, all that remains are the impurities from which soils develop. For this reason, it can be generalized that pure limestones develop shallow soils while regolith over dirty limestones can be quite thick. When two adjacent types of bedrock weather at different rates, they form contrasting landscapes. Generally, the more resistant formations of rock form flats or benches while the easily eroded formations result in steep areas. One of the most significant ways in which water is influenced by topography and geology is by local base levels. Bedrock that inhibits weathering usually perches temporary water tables above it. Water perched above a formation has very little physical erosive energy. Erosive capacity can only be derived from moving water or by its position relative to a base level *(8)*. When water carrying sediment reaches the next base level, it loses its load capacity and the sediment is dumped. There are six different geologic formations in Clay County, two of which hold up local base levels.

There are several processes, however, that work independently of geology. Because of aspect effect, soils on shady north- and east-facing slopes have a

Figure 14.—The Barfield-Gladdice-Rock outcrop map unit in the background is typical of soils weathered from the Leipers Catheys Limestone of Ordovician age. In the foreground is an area of Ocana soils derived from gravelly alluvium.

higher percent of organic matter than soils on sunny south- and west-facing slopes *(6)*. Topography can also affect amounts of rainfall, frost, or snow accumulation.

Geology and Landforms

At the end of the Ordovician age, some 440 million years ago, the bedrocks of middle Tennessee underwent a change and the Nashville Dome was created. Limestones, sandstones, and shales that had been deposited as level beds rose up in a shape of a dome several hundred miles wide *(24)*. The formations now rise about 15 feet per mile toward the center. The center of the dome was worn away long ago, and the Nashville Basin formed. The physiographic region known as the Highland Rim now encircles most of the Basin. To the east is the Cumberland Plateau.

Clay County lies in a unique position within the Nashville Basin and Highland Rim physiographic areas. The Monteagle, St. Louis, and Warsaw formations are cherty limestones of the Highland Rim. Christian, Frederick, Sengtown, and Talbott soils commonly formed in these limestones. Locally, the Warsaw formation holds up temporary water tables and acts as the local base level. Small stream

networks that develop usually run into sinks. Transported soils are sometimes 30 feet thick in these areas.

Between the two physiographic areas is an escarpment underlain by the Fort Payne formation. This formation is far less resistant to weathering than the Warsaw formation locally. Differential weathering produces slopes as high as 80 percent. In southwestern Clay County, the Fort Payne formation is a cherty siltstone in which soils that have high contents of chert gravel form. Hawthorne and Sugargrove soils are examples. Gradually the chert beds are lost as the formation transitions to the northeast. Near the Overton County line and the Pickett County line, the formation is a silicon-rich shale. Garmon, Newbern, and other soils that form in this area are commonly less than 40 inches deep to shale or siltstone bedrock.

The lowest geology in the county is the Leipers Catheys Limestone *(22)*. This pure limestone of the Nashville Basin is of Ordovician age. The uppermost part of this formation typically occurs on steep slopes. In the concave areas, Dellrose, Humphreys, and Renox soils form in very deep colluvium. In the more convex areas, colluvium is thin or non-existent and soils, such and Barfield, Gladdice, and Mimosa, form over the pure limestone bedrock (fig. 14). Lenses of limestone in the lower Leipers Catheys Limestone seem to be more resistant. The Cumberland River and its tributaries have stabilized and formed large alluvial deposits at elevations near 540 feet. The northern parts of Clay County are characterized by large flood plains with few terraces at this elevation, whereas areas downstream have broader terraces at this elevation and narrow flood plains.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 40-inch profile or to a limiting layer is expressed as:

Very low	0 to 2
Low	2 to 4
Moderate	4 to 6
High	more than 6

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles.

Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a

planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher

bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable

layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine-grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5

millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a

soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	1.8 to 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth’s surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 2 percent
Nearly level	0 to 3 percent
Gently sloping	2 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 20 percent
Steep	20 to 40 percent
Very steep	40 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 2 percent
Undulating	2 to 8 percent
Rolling	5 to 12 percent
Hilly	12 to 20 percent
Steep	20 to 60 percent
Very steep	40 percent and higher

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or

its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1961-90 at Livingston, Tennessee)

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average	Temperature: 2 years in 10 will have-- Maximum temperature higher than--	Temperature: 2 years in 10 will have-- Minimum temperature lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	45.5	25.3	35.4	70	-9	84	4.17	2.01	6.04	8	4.7
February-	50.3	27.6	38.9	74	-3	117	4.00	2.03	5.71	7	3.9
March----	61.2	36.8	49.0	82	11	311	5.03	2.76	7.03	9	0.6
April----	70.9	44.5	57.7	87	23	531	4.32	2.40	6.30	7	0.2
May------	77.8	52.2	65.0	89	32	772	5.07	3.05	6.88	7	0.0
June-----	84.8	60.0	72.4	95	42	968	3.77	2.28	5.11	6	0.0
July-----	87.4	63.9	75.7	98	49	1,105	5.32	2.86	7.49	7	0.0
August---	86.3	62.3	74.3	96	48	1,061	4.20	2.44	5.76	6	0.0
September	80.7	56.2	68.4	93	36	850	3.77	1.89	5.41	5	0.0
October--	70.7	43.9	57.3	85	23	534	3.09	1.53	4.65	5	0.0
November-	60.0	36.7	48.4	79	13	279	4.40	2.73	5.90	7	0.9
December-	50.0	29.6	39.8	72	0	134	5.14	2.43	7.48	7	1.5
Yearly:											
Average-	68.8	44.9	56.9	---	---	---	---	---	---	---	---
Extreme-	108	-25	---	99	-12	---	---	---	---	---	---
Total---	---	---	---	---	---	6,745	52.28	37.36	58.44	81	11.7

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Livingston, Tennessee)

Probability	Temperature: 24 °F or lower	Temperature: 28 °F or lower	Temperature: 32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 11	Apr. 24	May 10
2 years in 10 later than--	Apr. 6	Apr. 18	May 5
5 years in 10 later than--	Mar. 28	Apr. 7	Apr. 24
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 22	Oct. 6	Sept. 27
2 years in 10 earlier than--	Oct. 28	Oct. 12	Oct. 3
5 years in 10 earlier than--	Nov. 9	Oct. 24	Oct. 13

Table 3.—Growing Season

(Recorded in the period 1961-90 at Livingston, Tennessee)

Probability	Daily minimum temperature during growing season: Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	203	174	150
8 years in 10	211	183	157
5 years in 10	226	199	171
2 years in 10	240	215	185
1 year in 10	248	223	192

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
AmB	Armour silt loam, 2 to 5 percent slopes	615	0.4
AmC2	Armour silt loam, 5 to 12 percent slopes, eroded	865	0.5
Ar	Arrington silt loam, occasionally flooded	165	*
BaF	Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes	4,740	2.9
BeB2	Bewleyville silt loam, 2 to 5 percent slopes, eroded	860	0.5
BeC2	Bewleyville silt loam, 5 to 12 percent slopes, eroded	2,210	1.3
ByB	Byler silt loam, 2 to 5 percent slopes	400	0.2
CaD2	Caneyville-Lonewood complex, 6 to 25 percent slopes, eroded, rocky	1,525	0.9
CrC2	Christian loam, 5 to 12 percent slopes, eroded	1,325	0.8
CrD2	Christian loam, 12 to 20 percent slopes, eroded	1,900	1.1
CrE2	Christian loam, 20 to 40 percent slopes, eroded	1,690	1.0
CwD	Christian-Faywood complex, 12 to 20 percent slopes, rocky	705	0.4
CwE	Christian-Faywood complex, 20 to 40 percent slopes, very rocky	1,560	0.9
DeD2	Dellrose gravelly silt loam, 12 to 20 percent slopes, eroded	845	0.5
DeE	Dellrose gravelly silt loam, 20 to 45 percent slopes	1,830	1.1
DeF	Dellrose and Mimosa soils, 20 to 60 percent slopes	1,920	1.2
DfC2	Dewey silt loam, 5 to 12 percent slopes, eroded	400	0.2
DkB2	Dickson silt loam, 2 to 5 percent slopes, eroded	1,025	0.6
EwB	Etowah loam, 2 to 5 percent slopes	150	*
EwC2	Etowah loam, 5 to 12 percent slopes, eroded	490	0.3
FeC2	Frederick loam, 5 to 12 percent slopes, eroded	1,830	1.1
FeD2	Frederick loam, 12 to 20 percent slopes, eroded	3,635	2.2
FeE2	Frederick loam, 20 to 40 percent slopes, eroded	2,625	1.6
GnD	Garmon-Newbern complex, 5 to 20 percent slopes	2,300	1.4
GnF	Garmon-Newbern complex, 40 to 80 percent slopes, rocky	61,435	37.0
Ha	Hamblen loam, depressional	120	*
HhC	Hawthorne gravelly silt loam, 5 to 20 percent slopes	3,090	1.9
HhD	Hawthorne gravelly silt loam, 12 to 20 percent slopes	590	0.4
HhF	Hawthorne gravelly silt loam, 20 to 70 percent slopes	14,260	8.6
HoB	Holston loam, 2 to 5 percent slopes	115	*
HoC2	Holston loam, 5 to 12 percent slopes, eroded	970	0.6
HuB	Humphreys gravelly silt loam, 2 to 5 percent slopes	120	*
HuC	Humphreys gravelly silt loam, 5 to 12 percent slopes	335	0.2
Hw	Huntington silt loam, rarely flooded	690	0.4
Le	Lee gravelly silt loam, occasionally flooded	250	0.2
Ln	Lindside silt loam, occasionally flooded	1,025	0.6
Lo	Lobelville loam, occasionally flooded	1,015	0.6
Me	Melvin silt loam, ponded	410	0.2
MmD2	Mimosa silt loam, 12 to 20 percent slopes, eroded	425	0.3
MnC2	Minvale gravelly loam, 5 to 12 percent slopes, eroded	435	0.3
MnD2	Minvale gravelly loam, 12 to 20 percent slopes, eroded	290	0.2
MnE2	Minvale gravelly loam, 20 to 40 percent slopes, eroded	230	0.1
MoB2	Monongahela silt loam, 2 to 5 percent slopes, eroded	1,085	0.7
MoC2	Monongahela silt loam, 5 to 12 percent slopes, eroded	330	0.2
MtB2	Mountview silt loam, 2 to 5 percent slopes, eroded	1,245	0.8
MtC2	Mountview silt loam, 5 to 12 percent slopes, eroded	5,045	3.0
No	Nolin silt loam, occasionally flooded	535	0.3
Oc	Ocana gravelly silt loam, occasionally flooded	2,185	1.3
Pq	Pits, quarry	30	*
ReB	Renox silt loam, 2 to 5 percent slopes	430	0.3
ReC2	Renox silt loam, 5 to 12 percent slopes, eroded	1,640	1.0
SeC2	Sengtown cobbly loam, 5 to 12 percent slopes, eroded	350	0.2
SeD2	Sengtown cobbly loam, 12 to 20 percent slopes, eroded	160	*
SeE2	Sengtown cobbly loam, 20 to 40 percent slopes, eroded	135	*
Sm	Skidmore gravelly loam, occasionally flooded	990	0.6
Sn	Staser fine sandy loam, rarely flooded	685	0.4
SrB2	Sugargrove gravelly silt loam, 2 to 5 percent slopes, eroded	390	0.2
SrC2	Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded	4,745	2.9
SrD2	Sugargrove gravelly silt loam, 12 to 20 percent slopes, eroded	1,860	1.1
Su	Sullivan silt loam, depressional	215	0.1
Sv	Sullivan silt loam, occasionally flooded	605	0.4
TbD	Talbott-Rock outcrop complex, 5 to 20 percent slopes	230	0.1

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
TbE	Talbott-Rock outcrop complex, 20 to 40 percent slopes	515	0.3
TrB	Trace silt loam, 2 to 5 percent slopes	185	0.1
TrC2	Trace silt loam, 5 to 12 percent slopes, eroded	55	*
W	Water	20,700	12.5
WaB2	Waynesboro loam, 2 to 5 percent slopes, eroded	35	*
WaC2	Waynesboro loam, 5 to 12 percent slopes, eroded	135	*
WaD2	Waynesboro loam, 12 to 20 percent slopes, eroded	70	*
	Total	166,000	100.0

* Less than 0.1 percent.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Tall fescue-ladino	Tobacco	Wheat
		Bu	Bu	AUM*	Lbs	Bu
AmB: Armour	2e	140.00	45.00	8.00	2,900.00	65.00
AmC2: Armour	3e	120.00	38.00	7.50	2,700.00	52.00
Ar: Arrington	2w	150.00	45.00	8.00	3,000.00	65.00
BaF: Barfield-Gladdice-Rock outcrop	7s	---	---	---	---	---
BeB2: Bewleyville	2e	135.00	43.00	8.00	2,900.00	65.00
BeC2: Bewleyville	3e	115.00	38.00	7.50	2,650.00	60.00
ByB: Byler	2e	100.00	35.00	6.50	2,200.00	55.00
CaD2: Caneyville-Lonewood	6s	---	---	4.50	---	---
CrC2: Christian	3e	70.00	25.00	6.50	2,300.00	40.00
CrD2: Christian	4e	50.00	20.00	5.50	1,250.00	30.00
CrE2: Christian	6e	---	---	5.00	---	---
CwD: Christian-Faywood	6e	---	---	4.50	---	---
CwE: Christian-Faywood	7e	---	---	---	---	---
DeD2: Dellrose	4e	80.00	25.00	5.50	1,400.00	35.00
DeE: Dellrose	6e	---	---	4.50	---	---
DeF: Dellrose-Mimosa	7e	---	---	---	---	---
DfC2: Dewey	3e	80.00	30.00	6.50	2,400.00	50.00
DkB2: Dickson	2e	100.00	35.00	6.50	2,200.00	55.00

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Tall fescue-ladino	Tobacco	Wheat
		Bu	Bu	AUM*	Lbs	Bu
EwB:						
Etowah------------------	2e	130.00	40.00	8.00	2,800.00	62.00
EwC2:						
Etowah------------------	3e	110.00	32.00	6.50	2,500.00	50.00
FeC2:						
Frederick---------------	3e	75.00	25.00	6.50	2,300.00	40.00
FeD2:						
Frederick---------------	4e	55.00	20.00	5.50	1,250.00	30.00
FeE2:						
Frederick---------------	6e	---	---	5.00	---	---
GnD:						
Garmon-Newbern----------	6e	---	---	3.00	---	---
GnF:						
Garmon-Newbern----------	7e	---	---	---	---	---
Ha:						
Hamblen-----------------	3w	95.00	38.00	8.00	1,400.00	---
HhC, HhD:						
Hawthorne---------------	6s	---	---	3.50	---	---
HhF:						
Hawthorne---------------	7s	---	---	---	---	---
HoB:						
Holston-----------------	2e	125.00	40.00	7.50	2,750.00	58.00
HoC2:						
Holston-----------------	3e	100.00	30.00	6.50	2,400.00	50.00
HuB:						
Humphreys---------------	2e	125.00	38.00	6.50	2,750.00	50.00
HuC:						
Humphreys---------------	3e	100.00	32.00	6.00	2,400.00	42.00
Hw:						
Huntington--------------	1	150.00	45.00	8.00	3,000.00	65.00
Le:						
Lee---------------------	4w	60.00	25.00	7.00	---	35.00
Ln:						
Lindside----------------	2w	95.00	38.00	8.00	1,400.00	50.00
Lo:						
Lobelville--------------	2w	90.00	30.00	5.50	1,250.00	40.00
Me:						
Melvin------------------	5w	---	---	5.50	---	---
MmD2:						
Mimosa------------------	6e	---	---	3.50	---	---

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Tall fescue-ladino	Tobacco	Wheat
		Bu	Bu	AUM*	Lbs	Bu
MnC2:						
Minvale	3e	95.00	32.00	6.50	2,600.00	50.00
MnD2:						
Minvale	4e	80.00	22.00	6.00	2,200.00	35.00
MnE2:						
Minvale	6e	---	---	5.50	---	---
MoB2:						
Monongahela	2e	100.00	35.00	6.50	2,200.00	55.00
MoC2:						
Monongahela	3e	85.00	30.00	6.00	1,800.00	45.00
MtB2:						
Mountview	2e	120.00	35.00	8.00	2,300.00	58.00
MtC2:						
Mountview	3e	95.00	30.00	6.50	2,100.00	55.00
No:						
Nolin	2w	145.00	45.00	8.00	2,950.00	60.00
Oc:						
Ocana	2w	115.00	30.00	7.00	2,600.00	50.00
Pq.						
Pits, quarry						
ReB:						
Renox	2e	130.00	40.00	6.50	2,800.00	55.00
ReC2:						
Renox	3e	110.00	35.00	6.00	2,600.00	48.00
SeC2:						
Sengtown	3e	75.00	25.00	6.50	2,300.00	40.00
SeD2:						
Sengtown	4e	55.00	20.00	5.50	1,250.00	30.00
SeE2:						
Sengtown	6e	---	---	5.50	---	---
Sm:						
Skidmore	3s	60.00	20.00	5.00	1,400.00	40.00
Sn:						
Staser	1	145.00	45.00	8.00	2,950.00	65.00
SrB2:						
Sugargrove	2e	85.00	28.00	6.00	2,300.00	35.00
SrC2:						
Sugargrove	3e	65.00	25.00	5.50	1,700.00	35.00
SrD2:						
Sugargrove	4e	50.00	20.00	5.00	1,250.00	28.00

See footnote at end of table.

Table 5.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Tall fescue-ladino	Tobacco	Wheat
		Bu	Bu	AUM*	Lbs	Bu
Su:						
Sullivan----------------	2w	110.00	40.00	8.00	2,300.00	45.00
Sv:						
Sullivan----------------	2w	140.00	40.00	8.00	2,900.00	60.00
TbD, TbE:						
Talbott-Rock outcrop----	7s	---	---	---	---	---
TrB:						
Trace-------------------	2e	125.00	40.00	7.00	2,800.00	55.00
TrC2:						
Trace-------------------	3e	110.00	35.00	6.00	2,400.00	50.00
W.						
Water						
WaB2:						
Waynesboro--------------	2e	110.00	35.00	7.00	2,700.00	52.00
WaC2:						
Waynesboro--------------	3e	80.00	30.00	6.50	2,400.00	45.00
WaD2:						
Waynesboro--------------	4e	60.00	20.00	6.00	1,300.00	30.00

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one sheep, or five goats) for 30 days.

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland)

Map symbol	Soil name
AmB	Armour silt loam, 2 to 5 percent slopes
Ar	Arrington silt loam, occasionally flooded
BeB2	Bewleyville silt loam, 2 to 5 percent slopes, eroded
ByB	Byler silt loam, 2 to 5 percent slopes
DkB2	Dickson silt loam, 2 to 5 percent slopes, eroded
EwB	Etowah loam, 2 to 5 percent slopes
Ha	Hamblen loam, depressional
HoB	Holston loam, 2 to 5 percent slopes
HuB	Humphreys gravelly silt loam, 2 to 5 percent slopes
Hw	Huntington silt loam, rarely flooded
Ln	Lindside silt loam, occasionally flooded
Lo	Lobelville loam, occasionally flooded
MoB2	Monongahela silt loam, 2 to 5 percent slopes, eroded
MtB2	Mountview silt loam, 2 to 5 percent slopes, eroded
No	Nolin silt loam, occasionally flooded
Oc	Ocana gravelly silt loam, occasionally flooded
ReB	Renox silt loam, 2 to 5 percent slopes
Sn	Staser fine sandy loam, rarely flooded
SrB2	Sugargrove gravelly silt loam, 2 to 5 percent slopes, eroded
Su	Sullivan silt loam, depressional
Sv	Sullivan silt loam, occasionally flooded
TrB	Trace silt loam, 2 to 5 percent slopes
WaB2	Waynesboro loam, 2 to 5 percent slopes, eroded

Table 7.—Forest Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
AmB, AmC2:				
Armour	yellow-poplar	100	107	black walnut, cherrybark oak, shortleaf pine, white oak, yellow-poplar
	shortleaf pine	90	144	
	black walnut	85	75	
	white oak	80	62	
Ar:				
Arrington	yellow-poplar	100	107	black walnut, cherrybark oak, shortleaf pine, sweetgum, white oak, yellow-poplar
	black walnut	85	75	
	sweetgum	85	70	
	white oak	80	62	
	cherrybark oak	80	62	
	shortleaf pine	90	144	
BaF:				
Barfield	eastern redcedar	35	14	eastern redcedar
Gladdice	chestnut oak	55	43	chestnut oak, Virginia pine, eastern redcedar
	Virginia pine	55	41	
	eastern redcedar	40	40	
Rock outcrop.				
BeB2, BeC2:				
Bewleyville	shortleaf pine	75	113	black cherry, shortleaf pine, southern red oak, white oak, yellow poplar
	yellow-poplar	100	90	
	southern red oak	80	57	
	white oak	80	52	
ByB:				
Byler	cherrybark oak	80	57	cherrybark oak, southern red oak, white oak, yellow-poplar
	southern red oak	70	57	
	white oak	70	62	
	yellow-poplar	90	86	
CaD2:				
Caneyville	eastern redcedar	36	43	eastern redcedar, Virginia pine, white oak
	Virginia pine	60	100	
	white oak	53	43	
Lonewood	eastern redcedar	50	45	eastern redcedar, shortleaf pine, Virginia pine, white oak
	shortleaf pine	70	114	
	Virginia pine	70	114	
	white oak	70	57	
CrC2, CrD2:				
Christian	chestnut oak	80	62	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
	white oak	80	52	
	shortleaf pine	70	114	
CrE2:				
Christian	chestnut oak	72	58	shortleaf pine, southern red oak, yellow-poplar
	shortleaf pine	70	114	
	southern red oak	70	57	
	yellow-poplar	90	86	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CwD, CwE:				
Christian	shortleaf pine	72	57	shortleaf pine, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
Faywood	white oak	60	43	northern red oak, scarlet oak, white oak
	scarlet oak	72	57	
	northern red oak	70	57	
DeD2, DeE:				
Dellrose	yellow-poplar	100	100	black walnut, shortleaf pine, southern red oak, yellow-poplar
	shortleaf pine	80	114	
	southern red oak	75	57	
	black walnut	75	75	
DeF:				
Dellrose	yellow-poplar	100	100	black walnut, shortleaf pine, southern red oak, yellow-poplar
	shortleaf pine	80	114	
	southern red oak	75	57	
	black walnut	75	75	
Mimosa	eastern redcedar	45	57	chestnut oak, eastern redcedar, shortleaf pine
	shortleaf pine	80	114	
	southern red oak	65	43	
DfC2:				
Dewey	black walnut	70	57	black walnut, shortleaf pine, southern red oak, white oak, yellow-poplar
	shortleaf pine	73	114	
	southern red oak	70	57	
	white oak	70	57	
	yellow-poplar	90	86	
DkB2:				
Dickson	yellow-poplar	90	90	cherrybark oak, southern red oak, white oak, yellow-poplar
	southern red oak	75	57	
	white oak	70	57	
	cherrybark oak	70	57	
EwB, EwC2:				
Etowah	shortleaf pine	85	129	black walnut, cherrybark oak, shortleaf pine, yellow-poplar
	southern red oak	80	57	
	white oak	70	57	
	yellow-poplar	100	86	
FeC2, FeD2, FeE2:				
Frederick	black oak	80	72	black oak, northern red oak, white oak, yellow-poplar
	northern red oak	80	72	
	white oak	80	72	
	yellow-poplar	90	100	
GnD:				
Garmon	chestnut oak	70	57	chestnut oak, eastern redcedar, scarlet oak, Virginia pine
	eastern redcedar	35	29	
	scarlet oak	75	57	
	Virginia pine	80	114	
Newbern	chestnut oak	70	57	chestnut oak, eastern redcedar, scarlet oak, Virginia pine
	eastern redcedar	35	29	
	scarlet oak	75	57	
	Virginia pine	80	114	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GnF:				
Garmon	beech	73	---	chestnut oak, eastern redcedar, scarlet oak, Virginia pine
	chestnut oak	70	57	
	eastern redcedar	35	29	
	scarlet oak	75	57	
	Virginia pine	80	114	
Newbern	chestnut oak	70	57	chestnut oak, eastern redcedar, scarlet oak, Virginia pine
	eastern redcedar	35	29	
	scarlet oak	75	57	
	Virginia pine	80	114	
Ha:				
Hamblen	American sycamore	86	93	American sycamore, eastern cottonwood, shortleaf pine, yellow-poplar
	eastern cottonwood	80	85	
	shortleaf pine	85	114	
	yellow-poplar	90	107	
HhC, HhD:				
Hawthorne	Virginia pine	60	75	eastern redcedar, Virginia pine
	eastern redcedar	40	35	
HhF:				
Hawthorne	beech	---	0	eastern redcedar, Virginia pine
	chestnut oak	60	43	
	eastern redcedar	40	35	
	loblolly pine	60	86	
	Virginia pine	60	75	
HoB, HoC2:				
Holston	northern red oak	78	57	northern red oak, shortleaf pine, yellow-poplar
	shortleaf pine	69	114	
	yellow-poplar	86	86	
HuB, HuC:				
Humphreys	American sycamore	75	81	American sycamore, black walnut, sweetgum, white ash, yellow-poplar
	black walnut	85	75	
	sweetgum	75	86	
	white ash	80	75	
	yellow-poplar	100	107	
Hw:				
Huntington	black walnut	85	75	black walnut, northern red oak, sweetgum, yellow-poplar
	cherrybark oak	85	100	
	sweetgum	75	86	
	yellow-poplar	95	100	
Le:				
Lee	American sycamore	100	85	American sycamore, swamp white oak, sweetgum, water oak, willow oak, yellow-poplar
	swamp white oak	70	62	
	sweetgum	95	93	
	water oak	80	72	
	willow oak	80	72	
	yellow-poplar	70	85	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
			cu ft/ac	
Ln:				
Lindside	American sycamore	90	85	American sycamore, green ash, swamp white oak, white ash, yellow-poplar
	green ash	90	86	
	swamp white oak	85	62	
	white ash	85	57	
	yellow-poplar	100	107	
Lo:				
Lobelville	American sycamore	90	85	American sycamore, green ash, swamp white oak, white ash, yellow-poplar
	green ash	85	86	
	swamp white oak	80	62	
	white ash	80	57	
	yellow-poplar	90	107	
Me:				
Melvin	green ash	78	43	green ash, swamp white oak, sweetgum
	swamp white oak	73	43	
	sweetgum	100	98	
	willow oak	73	43	
MmD2:				
Mimosa	chestnut oak	65	43	chestnut oak, eastern redcedar, shortleaf pine
	eastern redcedar	50	45	
	shortleaf pine	70	57	
MnC2, MnD2, MnE2:				
Minvale	black walnut	80	62	black walnut, shortleaf pine, white oak, yellow-poplar
	shortleaf pine	80	114	
	white oak	80	57	
	yellow-poplar	100	100	
MoB2:				
Monongahela	cherrybark oak	80	62	cherrybark oak, swamp white oak, sweetgum, yellow-poplar
	swamp white oak	80	62	
	sweetgum	95	93	
	yellow-poplar	90	107	
MoC2:				
Monongahela	cherrybark oak	80	62	eastern white pine, northern red oak, yellow-poplar
	swamp white oak	80	62	
	sweetgum	95	93	
	yellow-poplar	90	107	
MtB2, MtC2:				
Mountview	shortleaf pine	65	100	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
No:				
Nolin	American sycamore	90	92	American sycamore, black walnut, cherrybark oak, sweetgum, yellow-poplar
	black walnut	85	75	
	cherrybark oak	80	62	
	sweetgum	85	70	
	yellow-poplar	107	114	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Oc:				
Ocana	black oak	80	62	cherrybark oak, shortleaf pine, yellow-poplar
	shortleaf pine	90	129	
	yellow-poplar	100	114	
Pq.				
Pits, quarry				
ReB, ReC2:				
Renox	black walnut	85	63	black walnut, cherrybark oak, shortleaf pine, sweetgum, yellow-poplar
	cherrybark oak	80	62	
	shortleaf pine	90	144	
	sweetgum	85	107	
	yellow-poplar	100	95	
SeC2, SeD2:				
Sengtown	shortleaf pine	70	114	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	white oak	80	52	
	yellow-poplar	90	86	
SeE2:				
Sengtown	shortleaf pine	70	114	shortleaf pine, southern red oak, yellow-poplar
	southern red oak	70	57	
	yellow-poplar	90	86	
Sm:				
Skidmore	yellow-poplar	100	107	cherrybark oak, yellow-poplar, sweetgum, American sycamore, white oak
	sweetgum	85	85	
	American sycamore	85	80	
	white oak	75	57	
Sn:				
Staser	black walnut	85	63	black walnut, shortleaf pine, white oak, yellow-poplar
	shortleaf pine	90	129	
	white oak	80	57	
	yellow-poplar	100	114	
SrB2, SrC2, SrD2:				
Sugargrove	shortleaf pine	60	79	chestnut oak, eastern redcedar, shortleaf pine
	chestnut oak	50	41	
	eastern redcedar	45	45	
Su:				
Sullivan	cherrybark oak	80	62	cherrybark oak, shortleaf pine, sweetgum, yellow-poplar
	shortleaf pine	70	114	
	sweetgum	85	107	
	yellow-poplar	100	107	
Sv:				
Sullivan	black oak	80	62	shortleaf pine, sweetgum, yellow-poplar
	shortleaf pine	70	114	
	sweetgum	85	107	
	yellow-poplar	100	107	

Table 7.—Forest Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
TbD:				
Talbott	eastern redcedar	40	43	eastern redcedar, northern red oak, shortleaf pine, Virginia pine
	northern red oak	65	52	
	shortleaf pine	64	90	
	Virginia pine	70	114	
Rock outcrop.				
TbE:				
Talbott	beech	---	---	eastern redcedar, shortleaf pine, southern red oak, Virginia pine
	eastern redcedar	40	43	
	hickory	---	---	
	shortleaf pine	64	90	
	Virginia pine	70	114	
Rock outcrop.				
TrB, TrC2:				
Trace	black walnut	85	63	black walnut, cherrybark oak, shortleaf pine, yellow-poplar
	cherrybark oak	80	62	
	shortleaf pine	90	144	
	sweetgum	85	107	
	yellow-poplar	100	95	
W. Water				
WaB2, WaC2, WaD2:				
Waynesboro	shortleaf pine	90	114	shortleaf pine, southern red oak, white oak, yellow-poplar
	southern red oak	80	86	
	white oak	70	57	
	yellow-poplar	90	86	

Table 8.—Forestland Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
AmC2:							
Armour	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
Ar:							
Arrington	95	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
BaF:							
Barfield	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
				Stickiness	0.50		
Gladdice	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
BeC2:							
Bewleyville	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
ByB:							
Byler	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
CaD2:							
Caneyville	40	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Strength	1.00
		Slope	0.50	Rock fragments	0.50		
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
Lonewood	35	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Restrictive layer	0.50	Rock fragments	0.50		
		Strength	0.50	Strength	0.50		

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CrC2:							
Christian	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
CrD2, CrE2:							
Christian	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
CwD:							
Christian	50	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Rock fragments	0.50		
		Strength	0.50	Strength	0.50		
Faywood	40	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Strength	1.00
		Slope	0.50	Rock fragments	0.50		
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
CwE:							
Christian	50	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stoniness	0.50	Rock fragments	1.00		
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
Faywood	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Restrictive layer	0.50	Rock fragments	1.00		
		Stoniness	0.50	Strength	0.50		
		Stickiness/slope	0.50				
		Strength	0.50				
DeD2:							
Dellrose	85	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Strength	1.00
		Slope	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
DeE:							
Dellrose	85	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
DeF:							
Dellrose	65	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Strength	1.00
		Slope	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Mimosa	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DfC2:							
Dewey	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
DkB2:							
Dickson	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
EwB:							
Etowah	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
EwC2:							
Etowah	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
FeC2:							
Frederick	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
FeD2, FeE2:							
Frederick	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
GnD:							
Garmon	50	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Strength	1.00
		Landslides	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
Newbern	30	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Strength	1.00
		Landslides	0.50	Strength	0.50		
		Strength	0.50	Landslides	0.50		
GnF:							
Garmon	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Strength	1.00
		Landslides	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Newbern	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Strength	1.00
		Landslides	1.00	Landslides	1.00		
		Strength	0.50	Strength	0.50		
Ha:							
Hamblen	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Ponding	0.50	Strength	1.00
				Strength	0.50		

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
HhC:							
Hawthorne	85	Slight		Poorly suited		Slight	
				Slope	1.00	Strength	0.10
HhD:							
Hawthorne	85	Moderate		Poorly suited		Slight	
		Landslides	0.50	Slope	1.00	Strength	0.10
		Slope	0.50	Landslides	0.50		
HhF:							
Hawthorne	85	Severe		Poorly suited		Slight	
		Landslides	1.00	Slope	1.00	Strength	0.10
		Slope	1.00	Landslides	1.00		
HoB:							
Holston	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
HoC2:							
Holston	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
HuB:							
Humphreys	95	Slight		Well suited		Slight	
						Strength	0.10
HuC:							
Humphreys	95	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
Hw:							
Huntington	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
Le:							
Lee	85	Moderate		Poorly suited		Severe	
		Flooding	0.50	Wetness	1.00	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
Ln:							
Lindside	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
				Wetness	0.50		
Lo:							
Lobelville	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Me:							
Melvin	85	Moderate		Poorly suited		Severe	
		Strength	0.50	Ponding	1.00	Strength	1.00
				Wetness	1.00		
				Strength	0.50		

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MmD2:							
Mimosa	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Restrictive layer	0.50				
		Strength	0.50				
MnC2:							
Minvale	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
MnD2, MnE2:							
Minvale	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
MoB2:							
Monongahela	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Wetness	0.50		
MoC2:							
Monongahela	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
				Wetness	0.50		
MtB2:							
Mountview	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
MtC2:							
Mountview	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
No:							
Nolin	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Oc:							
Ocana	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
ReC2:							
Renox	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
SeC2:							
Sengtown	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
SeD2, SeE2:							
Sengtown	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
Sm:							
Skidmore	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Sn:							
Staser	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
SrB2:							
Sugargrove	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
SrC2:							
Sugargrove	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
SrD2:							
Sugargrove	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		
Su:							
Sullivan	90	Moderate		Moderately suited		Severe	
		Strength	0.50	Ponding	0.50	Strength	1.00
				Strength	0.50		
Sv:							
Sullivan	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Strength	1.00
		Strength	0.50	Strength	0.50		
TbD:							
Talbott	65	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Strength	1.00
		Stickiness/slope	0.50	Strength	0.50		
		Strength	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 8.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
TbE:							
Talbott	65	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Restrictive layer	0.50	Strength	0.50		
		Stickiness/slope	0.50				
		Strength	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
TrC2:							
Trace	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
WaC2:							
Waynesboro	85	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
WaD2:							
Waynesboro	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Strength	0.50	Strength	0.50		

Table 8.—Forestland Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
AmB:							
Armour	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
AmC2:							
Armour	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
Ar:							
Arrington	95	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
BaF:							
Barfield	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
						Stickiness	0.50
Gladdice	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
BeC2:							
Bewleyville	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
ByB:							
Byler	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
						Wetness	0.50
CaD2:							
Caneyville	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Strength	0.50
Lonewood	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Strength	0.50
CrC2:							
Christian	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
CrD2:							
Christian	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
CrE2:							
Christian	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
CwD:							
Christian	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Strength	0.50
Faywood	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Strength	0.50
CwE:							
Christian	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Strength	0.50
Faywood	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Strength	0.50
DeD2:							
Dellrose	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
						Landslides	0.50
DeE:							
Dellrose	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Strength	0.50
DeF:							
Dellrose	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Strength	0.50
Mimosa	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
DfC2:							
Dewey	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
DkB2:							
Dickson	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
						Wetness	0.50
EwB:							
Etowah	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
EwC2:							
Etowah	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
FeC2:							
Frederick	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
FeD2, FeE2:							
Frederick	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
GnD:							
Garmon	50	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
						Landslides	0.50
Newbern	30	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
						Landslides	0.50
GnF:							
Garmon	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Strength	0.50
Newbern	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Strength	0.50
Ha:							
Hamblen	90	Slight		Slight		Moderately suited	
						Ponding	0.50
						Strength	0.50
HhC:							
Hawthorne	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Slope	1.00
HhD:							
Hawthorne	85	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Landslides	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
HhF:							
Hawthorne	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
HoB:							
Holston	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
HoC2:							
Holston	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
HuB:							
Humphreys	95	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
HuC:							
Humphreys	95	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Hw:							
Huntington	85	Slight		Slight		Moderately suited	
						Strength	0.50
Le:							
Lee	85	Slight		Slight		Poorly suited	
						Wetness	1.00
						Flooding	0.50
						Strength	0.50
Ln:							
Lindside	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
						Wetness	0.50
Lo:							
Lobelville	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
Me:							
Melvin	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	1.00
						Strength	0.50
MmD2:							
Mimosa	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
MnC2:							
Minvale	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
MnD2, MnE2:							
Minvale	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
MoB2:							
Monongahela	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
						Wetness	0.50
MoC2:							
Monongahela	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
						Wetness	0.50
MtB2:							
Mountview	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
MtC2:							
Mountview	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
No:							
Nolin	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
Oc:							
Ocana	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
ReC2:							
Renox	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
SeC2:							
Sengtown	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
						Slope	0.50
SeD2, SeE2:							
Sengtown	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
Sm:							
Skidmore	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Strength	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
Sn:							
Staser	85	Slight		Slight		Moderately suited	
						Strength	0.50
SrB2:							
Sugargrove	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
SrC2:							
Sugargrove	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
SrD2:							
Sugargrove	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
Su:							
Sullivan	90	Slight		Slight		Moderately suited	
						Ponding	0.50
						Strength	0.50
Sv:							
Sullivan	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Strength	0.50
TbD:							
Talbott	65	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
TrC2:							
Trace	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50

Table 8.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
WaC2:							
Waynesboro----------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Strength	0.50
						Slope	0.50
WaD2:							
Waynesboro----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50

Table 8.—Forestland Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
AmB:							
Armour	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
AmC2:							
Armour	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
Ar:							
Arrington	95	Well suited		Well suited		Moderately suited	
						Strength	0.50
BaF:							
Barfield	40	Poorly suited		Unsuited		Poorly suited	
		Stickiness	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness	0.75	Strength	0.50
						Stickiness	0.50
Gladdice	35	Moderately suited		Unsuited		Poorly suited	
		Stickiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness	0.50	Strength	0.50
				Rock fragments	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
BeC2:							
Bewleyville	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
ByB:							
Byler	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
CaD2:							
Caneyville	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Strength	0.50
Lonewood	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Strength	0.50
CrC2:							
Christian	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
CrD2:							
Christian	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50

Table 8.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
CrE2:							
Christian	85	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
						Strength	0.50
CwD:							
Christian	50	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Strength	0.50
Faywood	40	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Slope	0.75	Rock fragments	0.50
				Stickiness	0.75	Strength	0.50
				Rock fragments	0.50		
CwE:							
Christian	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
				Rock fragments	0.75	Slope	0.50
						Strength	0.50
Faywood	40	Poorly suited		Unsuited		Poorly suited	
		Stickiness	0.75	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Stickiness	0.75	Slope	0.50
				Rock fragments	0.75	Strength	0.50
DeD2:							
Dellrose	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50		
DeE:							
Dellrose	85	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50	Strength	0.50
DeF:							
Dellrose	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
Mimosa	30	Moderately suited		Unsuited		Poorly suited	
		Stickiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness	0.50	Strength	0.50
DfC2:							
Dewey	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
DkB2:							
Dickson	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
EwB:							
Etowah	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
EwC2:							
Etowah	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50

Table 8.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
FeC2:							
Frederick-----------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
				Slope	0.50		
FeD2:							
Frederick-----------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Slope	0.75	Strength	0.50
				Stickiness	0.75		
FeE2:							
Frederick-----------	85	Poorly suited		Unsuited		Moderately suited	
		Stickiness	0.75	Slope	1.00	Slope	0.50
				Stickiness	0.75	Strength	0.50
GnD:							
Garmon--------------	50	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
Newbern-------------	30	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
GnF:							
Garmon--------------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
Newbern-------------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Strength	0.50
Ha:							
Hamblen-------------	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
HhC:							
Hawthorne-----------	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
HhD:							
Hawthorne-----------	85	Well suited		Poorly suited		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
HhF:							
Hawthorne-----------	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
HoB:							
Holston-------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
HoC2:							
Holston-------------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50

Table 8.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
HuB:							
Humphreys-----------	95	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
HuC:							
Humphreys-----------	95	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Hw:							
Huntington----------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Le:							
Lee-----------------	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
Ln:							
Lindside-----------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Lo:							
Lobelville----------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Me:							
Melvin--------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
MmD2:							
Mimosa--------------	85	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50		
MnC2:							
Minvale-------------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
MnD2, MnE2:							
Minvale-------------	90	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50		
MoB2:							
Monongahela---------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
MoC2:							
Monongahela---------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
MtB2:							
Mountview-----------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
MtC2:							
Mountview-----------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50

Table 8.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
No:							
Nolin----------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
Oc:							
Ocana----------------	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
Pq:							
Pits, quarry---------	85	Not rated		Not rated		Not rated	
ReB:							
Renox----------------	90	Well suited		Well suited		Moderately suited	
						Strength	0.50
ReC2:							
Renox----------------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
SeC2:							
Sengtown------------	85	Moderately suited		Moderately suited		Moderately suited	
		Rock fragments	0.50	Slope	0.50	Strength	0.50
				Rock fragments	0.50		
SeD2:							
Sengtown------------	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Strength	0.50
				Rock fragments	0.50		
SeE2:							
Sengtown------------	85	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
				Rock fragments	0.50	Strength	0.50
Sm:							
Skidmore------------	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
Sn:							
Staser---------------	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
SrB2:							
Sugargrove----------	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
SrC2:							
Sugargrove----------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
				Rock fragments	0.50		
SrD2:							
Sugargrove----------	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50		
Su:							
Sullivan------------	90	Well suited		Well suited		Moderately suited	
						Strength	0.50

Table 8.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
Sv:							
Sullivan	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
TbD:							
Talbott	65	Poorly suited		Poorly suited		Moderately suited	
		Stickiness	0.75	Stickiness	0.75	Strength	0.50
				Slope	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Poorly suited		Unsuited		Moderately suited	
		Stickiness	0.75	Slope	1.00	Slope	0.50
				Stickiness	0.75	Strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Well suited		Well suited		Moderately suited	
						Strength	0.50
TrC2:							
Trace	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Strength	0.50
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
WaC2:							
Waynesboro	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness	0.50	Stickiness	0.50	Strength	0.50
				Slope	0.50		
WaD2:							
Waynesboro	85	Moderately suited		Poorly suited		Moderately suited	
		Stickiness	0.50	Slope	0.75	Strength	0.50
				Stickiness	0.50		

Table 8.—Forestland Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
AmB, AmC2:					
Armour	85	Well suited		Well suited	
Ar:					
Arrington	95	Well suited		Well suited	
BaF:					
Barfield	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50	Restrictive layer	1.00
Gladdice	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50	Restrictive layer	0.50
Rock outcrop	20	Not rated		Not rated	
BeB2, BeC2:					
Bewleyville	85	Well suited		Well suited	
ByB:					
Byler	85	Well suited		Well suited	
CaD2:					
Caneyville	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
Lonewood	35	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
CrC2:					
Christian	85	Well suited		Well suited	
CrD2, CrE2:					
Christian	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
CwD:					
Christian	50	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
Faywood	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50	Restrictive layer	0.50
		Stickiness	0.50		
CwE:					
Christian	50	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50

Table 8.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
CwE:					
Faywood	40	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
		Stickiness	0.50		
DeD2, DeE:					
Dellrose	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
DeF:					
Dellrose	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Mimosa	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness	0.50		
DfC2:					
Dewey	85	Well suited		Well suited	
DkB2:					
Dickson	85	Well suited		Well suited	
EwB, EwC2:					
Etowah	85	Well suited		Well suited	
FeC2:					
Frederick	85	Poorly suited		Well suited	
		Stickiness	0.50		
FeD2, FeE2:					
Frederick	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
GnD:					
Garmon	50	Well suited		Poorly suited	
				Restrictive layer	0.50
Newbern	30	Well suited		Unsuited	
				Restrictive layer	1.00
GnF:					
Garmon	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	1.00
Newbern	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	1.00
Ha:					
Hamblen	90	Well suited		Well suited	
HhC:					
Hawthorne	85	Well suited		Unsuited	
				Restrictive layer	1.00
				Rock fragments	0.50

Table 8.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
HhD:					
Hawthorne	85	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
				Slope	0.50
				Rock fragments	0.50
HhF:					
Hawthorne	85	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
				Slope	1.00
				Rock fragments	0.50
HoB, HoC2:					
Holston	85	Well suited		Well suited	
HuB, HuC:					
Humphreys	95	Well suited		Well suited	
Hw:					
Huntington	85	Well suited		Well suited	
Le:					
Lee	85	Well suited		Well suited	
Ln:					
Lindside	85	Well suited		Well suited	
Lo:					
Lobelville	85	Well suited		Well suited	
Me:					
Melvin	85	Well suited		Well suited	
MmD2:					
Mimosa	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50		
MnC2:					
Minvale	90	Well suited		Well suited	
MnD2, MnE2:					
Minvale	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
MoB2, MoC2:					
Monongahela	85	Well suited		Well suited	
MtB2, MtC2:					
Mountview	85	Well suited		Well suited	
No:					
Nolin	85	Well suited		Well suited	
Oc:					
Ocana	85	Well suited		Well suited	
Pq:					
Pits, quarry	85	Not rated		Not rated	

Table 8.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
ReB, ReC2:					
Renox	90	Well suited		Well suited	
SeC2:					
Sengtown	85	Poorly suited		Well suited	
		Rock fragments	0.50		
SeD2, SeE2:					
Sengtown	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Sm:					
Skidmore	85	Well suited		Well suited	
Sn:					
Staser	85	Well suited		Well suited	
SrB2, SrC2:					
Sugargrove	85	Well suited		Well suited	
SrD2:					
Sugargrove	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Su:					
Sullivan	90	Well suited		Well suited	
Sv:					
Sullivan	85	Well suited		Well suited	
TbD:					
Talbott	65	Poorly suited		Poorly suited	
		Stickiness	0.50	Restrictive layer	0.50
Rock outcrop	20	Not rated		Not rated	
TbE:					
Talbott	65	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness	0.50	Restrictive layer	0.50
Rock outcrop	20	Not rated		Not rated	
TrB, TrC2:					
Trace	85	Well suited		Well suited	
W:					
Water	100	Not rated		Not rated	
WaB2, WaC2:					
Waynesboro	85	Well suited		Well suited	
WaD2:					
Waynesboro	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 8.—Forestland Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
AmB, AmC2:					
Armour	85	Low		Low	
		Texture/coarse fragments	0.10		
Ar:					
Arrington	95	Low		Low	
		Texture/coarse fragments	0.10		
BaF:					
Barfield	40	Moderate		High	
		Texture/slope/ coarse fragments	0.50	Droughty	1.0
Gladdice	35	Moderate		Moderate	
		Texture/coarse fragments	0.50	Droughty	0.75
Rock outcrop	20	Not rated		Not rated	
BeB2, BeC2:					
Bewleyville	85	Low		Low	
		Texture/coarse fragments	0.10		
ByB:					
Byler	85	Low		Low	
		Texture/coarse fragments	0.10		
CaD2:					
Caneyville	40	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.75
Lonewood	35	Low		Low	
CrC2, CrD2:					
Christian	85	Low		Low	
		Texture/coarse fragments	0.10		
CrE2:					
Christian	85	Low		Moderate	
				Droughty	0.5

Table 8.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
CwD:					
Christian	50	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.5
Faywood	40	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.75
CwE:					
Christian	50	Low		Moderate	
				Droughty	0.5
Faywood	40	Low		Moderate	
				Droughty	0.75
DeD2:					
Dellrose	85	Low		Low	
		Texture/coarse fragments	0.10		
DeE:					
Dellrose	85	Low		Low	
DeF:					
Dellrose	65	Low		Moderate	
				Droughty	0.5
Mimosa	30	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.75
DfC2:					
Dewey	85	Low		Low	
		Texture/coarse fragments	0.10		
DkB2:					
Dickson	85	Moderate		Low	
		Texture/coarse fragments	0.50		
EwB, EwC2:					
Etowah	85	Low		Low	
		Texture/coarse fragments	0.10		
FeC2, FeD2:					
Frederick	85	Moderate		Low	
		Texture/coarse fragments	0.50		
FeE2:					
Frederick	85	High		Low	
		Texture/slope/ coarse fragments	1.00		

Table 8.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
GnD:					
Garmon	50	Low		Moderate	
				Droughty	0.75
Newbern	30	Low		Moderate	
				Droughty	0.75
GnF:					
Garmon	45	High		High	
		Texture/slope/ surface depth/ coarse fragments	1.00	Droughty	1.0
Newbern	35	High		High	
		Texture/slope/ surface depth/ coarse fragments	1.00	Droughty	1.0
Ha:					
Hamblen	90	Low		Low	
		Texture/coarse fragments	0.10		
HhC:					
Hawthorne	85	Low		Moderate	
				Droughty	0.75
HhD:					
Hawthorne	85	Low		High	
				Droughty	1.0
HhF:					
Hawthorne	85	Moderate		High	
		Texture/slope/ surface depth/ coarse fragments	0.50	Droughty	1.0
HoB, HoC2:					
Holston	85	Moderate		Low	
		Texture/coarse fragments	0.50		
HuB, HuC:					
Humphreys	95	Low		Low	
		Texture/coarse fragments	0.10		
Hw:					
Huntington	85	Low		Low	
		Texture/coarse fragments	0.10		
Le:					
Lee	85	Low		High	
		Texture/coarse fragments	0.10	Wetness	1.00
Ln:					
Lindside	85	Low		Low	
		Texture/coarse fragments	0.10		
Lo:					
Lobelville	85	Low		Low	

Table 8.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Me:					
Melvin	85	Moderate		High	
		Texture/coarse fragments	0.50	Wetness	1.00
MmD2:					
Mimosa	85	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.75
MnC2, MnD2, MnE2:					
Minvale	90	Moderate		Low	
		Texture/coarse fragments	0.50		
MoB2, MoC2:					
Monongahela	85	Low		Low	
		Texture/coarse fragments	0.10		
MtB2, MtC2:					
Mountview	85	Low		Low	
		Texture/coarse fragments	0.10		
No:					
Nolin	85	Low		Low	
		Texture/coarse fragments	0.10		
Oc:					
Ocana	85	Low		Low	
		Texture/coarse fragments	0.10		
Pq:					
Pits, quarry	85	Not rated		Not rated	
ReB, ReC2:					
Renox	90	Low		Low	
		Texture/coarse fragments	0.10		
SeC2, SeD2:					
Sengtown	85	Moderate		Low	
		Texture/coarse fragments	0.50		
SeE2:					
Sengtown	85	High		Low	
		Texture/slope coarse fragments	1.00		
Sm:					
Skidmore	85	Low		Moderate	
		Texture/coarse fragments	0.10	Droughty	0.5

Table 8.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Sn:					
Staser	85	Low		Low	
		Texture/coarse fragments	0.10		
SrB2, SrC2, SrD2:					
Sugargrove	85	Low		Low	
		Texture/coarse fragments	0.10		
Su:					
Sullivan	90	Low		Low	
		Texture/coarse fragments	0.10		
Sv:					
Sullivan	85	Low		Low	
		Texture/coarse fragments	0.10		
TbD:					
Talbott	65	Moderate		Moderate	
		Texture/coarse fragments	0.50	Droughty	0.75
Rock outcrop	20	Not rated		Not rated	
TbE:					
Talbott	65	High		High	
		Texture/slope/ coarse fragments	1.00	Droughty	1.00
Rock outcrop	20	Not rated		Not rated	
TrB, TrC2:					
Trace	85	Low		Low	
		Texture/coarse fragments	0.10		
W:					
Water	100	Not rated		Not rated	
WaB2, WaC2, WaD2:					
Waynesboro	85	Low		Low	
		Texture/coarse fragments	0.10		

Table 9.—Recreation, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
AmC2:							
Armour	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Ar:							
Arrington	95	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
						Content of large stones	0.03
Gladdice	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
						Depth to bedrock	0.65
						Content of large stones	0.03
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
BeC2:							
Bewleyville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ByB:							
Byler	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
						Slope	0.12
CaD2:							
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
		Too stony	0.19	Too stony	0.19	Depth to bedrock	0.46
						Too stony	0.19

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
CaD2:							
Lonewood	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
CrC2:							
Christian	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.96
CrD2, CrE2:							
Christian	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
CwD:							
Christian	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
		Too stony	0.19	Too stony	0.19	Too stony	0.19
Faywood	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
		Too stony	0.19	Too stony	0.19	Depth to bedrock	0.84
						Too stony	0.19
						Content of large stones	0.03
CwE:							
Christian	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
Faywood	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Restricted permeability	1.00
		Restricted permeability	1.00	Restricted permeability	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
						Depth to bedrock	0.46
						Content of large stones	0.03
DeD2, DeE:							
Dellrose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Content of large stones	0.01
DeF:							
Dellrose	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Content of large stones	0.01

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
DeF:							
Mimosa	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
						Gravel content	0.06
DfC2:							
Dewey	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.26	Restricted permeability	0.26	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.26
DkB2:							
Dickson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
						Slope	0.50
EwB:							
Etowah	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.06
EwC2:							
Etowah	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.06
FeC2:							
Frederick	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.50	Gravel content	0.50	Gravel content	1.00
		Restricted permeability	0.26	Restricted permeability	0.26	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.26
FeD2, FeE2:							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.50	Gravel content	0.50	Gravel content	1.00
		Restricted permeability	0.26	Restricted permeability	0.26	Restricted permeability	0.26
GnD:							
Garmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.36	Gravel content	0.36	Gravel content	1.00
						Depth to bedrock	0.54
						Content of large stones	0.01
Newbern	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
						Gravel content	0.18

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
GnF:							
Garmon	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.36	Gravel content	0.36	Gravel content	1.00
						Depth to bedrock	0.54
						Content of large stones	0.01
Newbern	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.18
Ha:							
Hamblen	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
HhC:							
Hawthorne	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Gravel content	1.00
		Gravel content	0.22	Gravel content	0.22	Slope	1.00
						Depth to bedrock	0.95
						Content of large stones	0.01
HhD, HhF:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.22	Gravel content	0.22	Gravel content	1.00
						Depth to bedrock	0.95
						Content of large stones	0.01
HoB:							
Holston	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.04
HoC2:							
Holston	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.04
HuB:							
Humphreys	95	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
						Slope	0.50
HuC:							
Humphreys	95	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Hw:							
Huntington	85	Very limited		Not limited		Not limited	
		Flooding	1.00				

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
Le:							
Lee	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Gravel content	0.06	Gravel content	1.00
		Gravel content	0.06			Flooding	0.60
Ln:							
Lindside	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
Lo:							
Lobelville	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.19	Gravel content	1.00
		Depth to saturated zone	0.39	Gravel content	0.18	Flooding	0.60
		Gravel content	0.18			Depth to saturated zone	0.39
Me:							
Melvin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
MmD2:							
Mimosa	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
						Gravel content	0.06
MnC2:							
Minvale	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.43
MnD2, MnE2:							
Minvale	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.43
MoB2:							
Monongahela	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
		Depth to saturated zone	0.88	Depth to cemented pan	0.65	Depth to saturated zone	0.88
		Depth to cemented pan	0.65	Depth to saturated zone	0.56	Depth to cemented pan	0.65
						Slope	0.12
MoC2:							
Monongahela	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.99	Restricted permeability	0.99	Slope	1.00
		Depth to saturated zone	0.88	Depth to cemented pan	0.65	Restricted permeability	0.99
		Depth to cemented pan	0.65	Depth to saturated zone	0.56	Depth to saturated zone	0.88
		Slope	0.04	Slope	0.04	Depth to cemented pan	0.65

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
MtB2:							
Mountview-----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.26	Restricted permeability	0.26	Slope	0.50
						Restricted permeability	0.26
MtC2:							
Mountview-----------	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.26	Restricted permeability	0.26	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.26
No:							
Nolin---------------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Oc:							
Ocana---------------	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Gravel content	0.12	Gravel content	1.00
		Gravel content	0.12			Flooding	0.60
Pq:							
Pits, quarry--------	85	Not rated		Not rated		Not rated	
ReB:							
Renox---------------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
ReC2:							
Renox---------------	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
SeC2:							
Sengtown------------	85	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.26	Restricted permeability	0.26	Slope	1.00
		Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.26
						Content of large stones	0.11
SeD2, SeE2:							
Sengtown------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.26	Restricted permeability	0.26	Gravel content	1.00
		Gravel content	0.05	Gravel content	0.05	Restricted permeability	0.26
						Content of large stones	0.11
Sm:							
Skidmore------------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Gravel content	0.94
						Flooding	0.60
Sn:							
Staser--------------	85	Very limited		Not limited		Not limited	
		Flooding	1.00				

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
SrB2:							
Sugargrove----------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.11	Gravel content	0.11	Gravel content	1.00
						Slope	0.50
						Depth to bedrock	0.06
						Content of large stones	0.01
SrC2:							
Sugargrove----------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.11	Gravel content	0.11	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
						Depth to bedrock	0.06
						Content of large stones	0.01
SrD2:							
Sugargrove----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.11	Gravel content	0.11	Gravel content	1.00
						Depth to bedrock	0.06
						Content of large stones	0.01
Su:							
Sullivan------------	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
						Gravel content	0.06
Sv:							
Sullivan------------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
						Gravel content	0.06
TbD:							
Talbott-------------	65	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.99	Restricted permeability	0.99	Slope	1.00
		Slope	0.84	Slope	0.84	Restricted permeability	0.99
						Depth to bedrock	0.20
Rock outcrop--------	20	Not rated		Not rated		Not rated	
TbE:							
Talbott-------------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
						Depth to bedrock	0.20
Rock outcrop--------	20	Not rated		Not rated		Not rated	
TrB:							
Trace---------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
TrC2:							
Trace---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Table 9.—Recreation, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
WaC2:							
Waynesboro	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
WaD2:							
Waynesboro	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 9.—Recreation, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
AmB:							
Armour	85	Not limited		Not limited		Not limited	
AmC2:							
Armour	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Ar:							
Arrington	95	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
						Content of large stones	0.03
Gladdice	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.65
						Droughty	0.10
						Content of large stones	0.03
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Not limited		Not limited		Not limited	
BeC2:							
Bewleyville	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
ByB:							
Byler	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
CaD2:							
Caneyville	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Depth to bedrock	0.46
		Slope	0.02				
Lonewood	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19		
		Slope	0.02				
CrC2:							
Christian	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
CrD2:							
Christian	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.02				
CrE2:							
Christian	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	0.22		
CwD:							
Christian	50	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19		
		Slope	0.02				
Faywood	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Depth to bedrock	0.84
		Slope	0.02			Droughty	0.05
						Content of large stones	0.03
CwE:							
Christian	50	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00		
		Slope	1.00	Slope	0.22		
Faywood	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Depth to bedrock	0.46
		Slope	1.00	Slope	0.22	Droughty	0.05
						Content of large stones	0.03
DeD2:							
Dellrose	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
						Gravel content	0.04
						Content of large stones	0.01
DeE:							
Dellrose	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.56	Slope	1.00
						Gravel content	0.04
						Content of large stones	0.01
DeF:							
Dellrose	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
						Content of large stones	0.01
Mimosa	30	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	1.00		

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
DfC2:							
Dewey	85	Not limited		Not limited		Somewhat limited	
						Slope	0.04
DkB2:							
Dickson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
EwB:							
Etowah	85	Not limited		Not limited		Not limited	
EwC2:							
Etowah	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
FeC2:							
Frederick	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.50
						Slope	0.04
FeD2:							
Frederick	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
						Gravel content	0.50
FeE2:							
Frederick	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.50
GnD:							
Garmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.54
						Gravel content	0.36
						Droughty	0.29
						Content of large stones	0.01
Newbern	30	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.84
GnF:							
Garmon	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.54
						Gravel content	0.36
						Droughty	0.29
						Content of large stones	0.01
Newbern	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Ha:							
Hamblen-------------	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
HhC:							
Hawthorne-----------	85	Not limited		Not limited		Very limited	
						Droughty	1.00
						Depth to bedrock	0.95
						Slope	0.84
						Gravel content	0.22
						Content of large stones	0.01
HhD:							
Hawthorne-----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Droughty	1.00
						Slope	1.00
						Depth to bedrock	0.95
						Gravel content	0.22
						Content of large stones	0.01
HhF:							
Hawthorne-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.95
						Gravel content	0.22
						Content of large stones	0.01
HoB:							
Holston-------------	85	Not limited		Not limited		Not limited	
HoC2:							
Holston-------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.04
HuB:							
Humphreys-----------	95	Not limited		Not limited		Somewhat limited	
						Gravel content	0.25
HuC:							
Humphreys-----------	95	Not limited		Not limited		Somewhat limited	
						Gravel content	0.25
						Slope	0.04
Hw:							
Huntington----------	85	Not limited		Not limited		Not limited	
Le:							
Lee-----------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
						Gravel content	0.06
Ln:							
Lindside------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
						Flooding	0.60

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
Lo:							
Lobelville	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.19
						Gravel content	0.18
Me:							
Melvin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
MmD2:							
Mimosa	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.02				
MnC2:							
Minvale	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
MnD2, MnE2:							
Minvale	90	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
MoB2:							
Monongahela	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to cemented pan	0.64
						Depth to saturated zone	0.56
MoC2:							
Monongahela	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to cemented pan	0.64
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
						Slope	0.04
MtB2:							
Mountview	85	Not limited		Not limited		Not limited	
MtC2:							
Mountview	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
No:							
Nolin	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
Oc:							
Ocana	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Gravel content	0.12
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
ReB:							
Renox	90	Not limited		Not limited		Not limited	
ReC2:							
Renox	90	Not limited		Not limited		Somewhat limited	
						Slope	0.04
SeC2:							
Sengtown	85	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.11
						Gravel content	0.05
						Slope	0.04
SeD2:							
Sengtown	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
						Content of large stones	0.11
						Gravel content	0.05
SeE2:							
Sengtown	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Content of large stones	0.11
						Gravel content	0.05
Sm:							
Skidmore	85	Not limited		Not limited		Somewhat limited	
						Droughty	0.88
						Flooding	0.60
Sn:							
Staser	85	Not limited		Not limited		Not limited	
SrB2:							
Sugargrove	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.11
						Depth to bedrock	0.06
						Content of large stones	0.01
SrC2:							
Sugargrove	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.11
						Depth to bedrock	0.06
						Slope	0.04
						Content of large stones	0.01
SrD2:							
Sugargrove	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
						Gravel content	0.11
						Depth to bedrock	0.06
						Content of large stones	0.01
Su:							
Sullivan	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00

Table 9.—Recreation, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
Sv:							
Sullivan	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
TbD:							
Talbott	65	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.84
						Depth to bedrock	0.20
						Droughty	0.06
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	0.22	Depth to bedrock	0.20
						Droughty	0.06
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Not limited		Not limited		Not limited	
TrC2:							
Trace	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Not limited		Not limited		Not limited	
WaC2:							
Waynesboro	85	Not limited		Not limited		Somewhat limited	
						Slope	0.04
WaD2:							
Waynesboro	85	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00

Table 10.—Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
AmB:										
Armour	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
AmC2:										
Armour	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Ar:										
Arrington	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
BaF:										
Barfield	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Gladdice	Very poor	Fair	Poor	Good	Fair	Very poor	Very poor	Poor	Good	Very poor
Rock outcrop.										
BeB2:										
Bewleyville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
BeC2:										
Bewleyville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
ByB:										
Byler	Good	Good	Good	Good	Poor	Poor	Poor	Good	Good	Poor
CaD2:										
Caneyville	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Lonewood	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CrC2:										
Christian	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
CrD2:										
Christian	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CrE2:										
Christian	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
CwD:										
Christian	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Faywood	Poor	Poor	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
CwE:										
Christian	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Faywood	Very poor	Poor	Good	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
DeD2:										
Dellrose	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DeE:										
Dellrose	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
DeF:										
Dellrose	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Mimosa	Very poor	Fair	Good	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
DfC2:										
Dewey	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
DkB2:										
Dickson	Good	Good	Good	Good	Poor	Poor	Very poor	Good	Good	Very poor
EwB:										
Etowah	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
EwC2:										
Etowah	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
FeC2, FeD2, FeE2:										
Frederick	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
GnD:										
Garmon	Poor	Fair	Good	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
Newbern	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
GnF:										
Garmon	Very poor	Poor	Good	Good	Poor	Very poor	Very poor	Poor	Fair	Very poor
Newbern	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Ha:										
Hamblen	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
HhC, HhD, HhF:										
Hawthorne	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
HoB, HoC2: Holston	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
HuB: Humphreys	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
HuC: Humphreys	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Hw: Huntington	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Le: Lee	Poor	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair	Fair
Ln: Lindside	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Lo: Lobelville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Me: Melvin	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
MmD2: Mimosa	Poor	Fair	Good	Good	Fair	Very poor	Very poor	Fair	Good	Very poor
MnC2: Minvale	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
MnD2, MnE2: Minvale	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
MoB2: Monongahela	Fair	Good	Good	Good	Poor	Poor	Very poor	Good	Good	Very poor
MoC2: Monongahela	Fair	Good	Good	Good	Poor	Very poor	Very poor	Good	Good	Very poor
MtB2: Mountview	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
MtC2: Mountview	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
No: Nolin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Open-land wild-life	Wood-land wild-life	Wetland wild-life
Oc: Ocana	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
Pq. Pits, quarry										
ReB: Renox	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
ReC2: Renox	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SeC2: Sengtown	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SeD2: Sengtown	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
SeE2: Sengtown	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Sm: Skidmore	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
Sn: Staser	Poor	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
SrB2, SrC2: Sugargrove	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
SrD2: Sugargrove	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Su, Sv: Sullivan	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
TbD, TbE: Talbott	Fair	Good	Good	Good	Fair	Poor	Very poor	Good	Good	Very poor
Rock outcrop.										
TrB, TrC2: Trace	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
W. Water										

Table 10.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hard- wood trees	Conif- erous plants	Wetland plants	Shallow water areas	Open- land wild- life	Wood- land wild- life	Wetland wild- life
WaB2: Waynesboro---------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WaC2: Waynesboro---------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
WaD2: Waynesboro---------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 11.—Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Not limited		Not limited		Not limited	
AmC2:							
Armour	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Ar:							
Arrington	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Shrink-swell	1.00	Depth to hard bedrock	1.00
		Shrink-swell	1.00	Depth to hard bedrock	1.00	Shrink-swell	1.00
Gladdice	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Not limited		Not limited		Not limited	
BeC2:							
Bewleyville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
ByB:							
Byler	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
CaD2:							
Caneyville	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
Lonewood	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.05		
CrC2:							
Christian	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
CrD2, CrE2:							
Christian	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
CwD:							
Christian	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Faywood	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Slope	1.00	Depth to hard bedrock	0.84
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
CwE:							
Christian	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Faywood	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.46	Shrink-swell	0.50	Depth to hard bedrock	0.46
DeD2, DeE:							
Dellrose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
DeF:							
Dellrose	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Mimosa	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.32		
DfC2:							
Dewey	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
DkB2:							
Dickson	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
				Shrink-swell	0.50		
EwB:							
Etowah	85	Not limited		Not limited		Not limited	
EwC2:							
Etowah	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
FeC2:							
Frederick	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
FeD2, FeE2:							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
GnD:							
Garmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
Newbern	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
GnF:							
Garmon	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
Newbern	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Ha:							
Hamblen	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
				Depth to saturated zone	1.00		
HhC:							
Hawthorne	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Depth to soft bedrock	0.95	Slope	1.00
				Slope	0.84		
HhD, HhF:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.95		
HoB:							
Holston	85	Not limited		Not limited		Not limited	
HoC2:							
Holston	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
HuB:							
Humphreys	95	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.03		

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
HuC:							
Humphreys	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
				Depth to saturated zone	0.03		
Hw:							
Huntington	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Le:							
Lee	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Ln:							
Lindside	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Lo:							
Lobelville	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
Me:							
Melvin	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
MmD2:							
Mimosa	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.32		
MnC2:							
Minvale	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
MnD2, MnE2:							
Minvale	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
MoB2:							
Monongahela	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
MoC2:							
Monongahela	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.88

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MtB2:							
Mountview	85	Not limited		Somewhat limited Shrink-swell	 0.50	Not limited	
MtC2:							
Mountview	85	Somewhat limited Slope	 0.04	Somewhat limited Shrink-swell Slope	 0.50 0.04	Very limited Slope	 1.00
No:							
Nolin	85	Very limited Flooding	 1.00	Very limited Flooding Depth to saturated zone	 1.00 0.35	Very limited Flooding	 1.00
Oc:							
Ocana	85	Very limited Flooding	 1.00	Very limited Flooding Depth to saturated zone	 1.00 0.35	Very limited Flooding	 1.00
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Not limited		Not limited		Not limited	
ReC2:							
Renox	90	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
SeC2:							
Sengtown	85	Somewhat limited Shrink-swell Slope	 0.50 0.04	Somewhat limited Shrink-swell Slope	 0.50 0.04	Very limited Slope Shrink-swell	 1.00 0.50
SeD2, SeE2:							
Sengtown	85	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50	Very limited Slope Shrink-swell	 1.00 0.50
Sm:							
Skidmore	85	Very limited Flooding	 1.00	Very limited Flooding Depth to saturated zone	 1.00 0.82	Very limited Flooding	 1.00
Sn:							
Staser	85	Very limited Flooding	 1.00	Very limited Flooding	 1.00	Very limited Flooding	 1.00
SrB2:							
Sugargrove	85	Not limited		Somewhat limited Depth to soft bedrock	 0.06	Not limited	
SrC2:							
Sugargrove	85	Somewhat limited Slope	 0.04	Somewhat limited Depth to soft bedrock Slope	 0.06 0.04	Very limited Slope	 1.00

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
SrD2:							
Sugargrove	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.06		
Su:							
Sullivan	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
				Depth to saturated zone	0.15		
Sv:							
Sullivan	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		
TbD:							
Talbott	65	Somewhat limited		Very limited		Very limited	
		Slope	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	0.84	Shrink-swell	0.50
		Depth to hard bedrock	0.20	Shrink-swell	0.50	Depth to hard bedrock	0.20
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.20	Shrink-swell	0.50	Depth to hard bedrock	0.20
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Not limited		Not limited		Not limited	
TrC2:							
Trace	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Not limited		Not limited		Not limited	
WaC2:							
Waynesboro	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
WaD2:							
Waynesboro	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 11.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and street		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
AmC2:							
Armour	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Ar:							
Arrington	95	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	1.00	Cutbanks cave	0.10		
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Content of large stones	0.03
		Low strength	1.00				
Gladdice	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.65
		Shrink-swell	1.00	Slope	1.00	Droughty	0.10
		Depth to hard bedrock	0.64	Too clayey	0.50	Content of large stones	0.03
				Cutbanks cave	0.10		
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
				Too clayey	0.02		
BeC2:							
Bewleyville	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
				Too clayey	0.02		
ByB:							
Byler	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56				
				Cutbanks cave	0.10		
CaD2:							
Caneyville	40	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00			Depth to bedrock	0.46
		Shrink-swell	0.50	Slope	1.00		
		Depth to hard bedrock	0.46	Too clayey	0.32		
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
CaD2:							
Lonewood------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
				Depth to hard bedrock	0.05		
CrC2:							
Christian-----------	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.50	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
CrD2, CrE2:							
Christian-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
CwD:							
Christian-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Faywood-------------	40	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	0.84
		Depth to hard bedrock	0.84	Too clayey	0.88	Droughty	0.05
		Shrink-swell	0.50	Cutbanks cave	0.10	Content of large stones	0.03
CwE:							
Christian-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Faywood-------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.46
		Shrink-swell	0.50	Too clayey	0.88	Droughty	0.05
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Content of large stones	0.03
DeD2:							
Dellrose------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Gravel content	0.04
				Too clayey	0.76	Content of large stones	0.01
DeE:							
Dellrose------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.04
				Too clayey	0.76	Content of large stones	0.01

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
DeF:							
Dellrose	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Gravel content	0.04
				Too clayey	0.76	Content of large stones	0.01
Mimosa	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.72		
		Shrink-swell	1.00	Depth to hard bedrock	0.32		
				Cutbanks cave	0.10		
DfC2:							
Dewey	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Too clayey	0.72	Slope	0.04
		Low strength	0.01	Cutbanks cave	0.10		
				Slope	0.04		
DkB2:							
Dickson	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
				Too clayey	0.03		
EwB:							
Etowah	85	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.78	Cutbanks cave	0.10		
EwC2:							
Etowah	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Low strength	0.78	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
FeC2:							
Frederick	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	1.00	Gravel content	0.50
		Shrink-swell	0.50	Too clayey	0.88	Slope	0.04
		Slope	0.04	Slope	0.04		
FeD2:							
Frederick	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Cutbanks cave	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Gravel content	0.50
		Shrink-swell	0.50	Too clayey	0.88		
FeE2:							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	1.00	Gravel content	0.50
		Shrink-swell	0.50	Too clayey	0.88		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
GnD:							
Garmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Slope	1.00	Depth to bedrock	0.54
				Cutbanks cave	0.10	Gravel content	0.36
						Droughty	0.29
						Content of large stones	0.01
Newbern	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Droughty	1.00
		Slope	0.84	Slope	0.84	Slope	0.84
				Cutbanks cave	0.10		
GnF:							
Garmon	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.54	Slope	1.00	Depth to bedrock	0.54
				Cutbanks cave	0.10	Gravel content	0.36
						Droughty	0.29
						Content of large stones	0.01
Newbern	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10		
Ha:							
Hamblen	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
				Depth to saturated zone	1.00		
				Cutbanks cave	0.10		
HhC:							
Hawthorne	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Depth to soft bedrock	0.95	Droughty	1.00
				Slope	0.84	Depth to bedrock	0.95
				Cutbanks cave	0.10	Slope	0.84
						Gravel content	0.22
						Content of large stones	0.01
HhD:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Droughty	1.00
				Depth to soft bedrock	0.95	Slope	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.95
						Gravel content	0.22
						Content of large stones	0.01

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
HhF:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.95	Droughty	1.00
						Depth to bedrock	0.95
				Cutbanks cave	0.10	Gravel content	0.22
						Content of large stones	0.01
HoB:							
Holston	85	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
HoC2:							
Holston	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
HuB:							
Humphreys	95	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Gravel content	0.25
				Depth to saturated zone	0.03		
HuC:							
Humphreys	95	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.25
				Slope	0.04	Slope	0.04
				Depth to saturated zone	0.03		
Hw:							
Huntington	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		
Le:							
Lee	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Gravel content	0.06
Ln:							
Lindside	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Low strength	1.00				
		Depth to saturated zone	0.96	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
Lo:							
Lobelville	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Depth to saturated zone	0.19			Depth to saturated zone	0.19
				Cutbanks cave	1.00		
				Flooding	0.60	Gravel content	0.18
Me:							
Melvin	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
MmD2:							
Mimosa	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	0.72		
		Slope	1.00	Depth to hard bedrock	0.32		
				Cutbanks cave	0.10		
MnC2:							
Minvale	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Slope	0.04
				Slope	0.04		
				Too clayey	0.02		
MnD2, MnE2:							
Minvale	90	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00		
				Too clayey	0.02		
MoB2:							
Monongahela	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.56	Depth to saturated zone	1.00	Depth to cemented pan	0.64
		Low strength	0.22	Cutbanks cave	1.00	Depth to saturated zone	0.56
MoC2:							
Monongahela	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.56	Depth to saturated zone	1.00	Depth to cemented pan	0.64
		Frost action	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.56
		Low strength	0.22	Slope	0.04	Slope	0.04
		Slope	0.04				
MtB2:							
Mountview	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.12		
				Cutbanks cave	0.10		
MtC2:							
Mountview	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.12	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
No:							
Nolin	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	1.00	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
Oc:							
Ocana	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Gravel content	0.12
				Depth to saturated zone	0.35		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
ReC2:							
Renox	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Slope	0.04
				Slope	0.04		
SeC2:							
Sengtown	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	1.00	Content of large stones	0.11
		Shrink-swell	0.50	Too clayey	0.50	Gravel content	0.05
		Slope	0.04	Slope	0.04	Slope	0.04
SeD2:							
Sengtown	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Content of large stones	0.11
		Shrink-swell	0.50	Too clayey	0.50	Gravel content	0.05
SeE2:							
Sengtown	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	1.00	Content of large stones	0.11
		Shrink-swell	0.50	Too clayey	0.50	Gravel content	0.05
Sm:							
Skidmore	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Droughty	0.88
				Depth to saturated zone	0.82	Flooding	0.60
				Flooding	0.60		
Sn:							
Staser	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		
SrB2:							
Sugargrove	85	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Gravel content	0.11
				Depth to soft bedrock	0.06	Depth to bedrock	0.06
						Content of large stones	0.01
SrC2:							
Sugargrove	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Gravel content	0.11
				Depth to soft bedrock	0.06	Depth to bedrock	0.06
						Slope	0.04
				Slope	0.04	Content of large stones	0.01

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
SrD2:							
Sugargrove	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Gravel content	0.11
				Depth to soft bedrock	0.06	Depth to bedrock	0.06
						Content of large stones	0.01
Su:							
Sullivan	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
				Depth to saturated zone	0.15		
				Cutbanks cave	0.10		
Sv:							
Sullivan	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
				Depth to saturated zone	0.15		
				Cutbanks cave	0.10		
TbD:							
Talbott	65	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.84
		Slope	0.84			Depth to bedrock	0.20
		Shrink-swell	0.50	Too clayey	0.98	Droughty	0.06
		Depth to hard bedrock	0.20	Slope	0.84		
				Cutbanks cave	0.10		
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.20
		Shrink-swell	0.50	Slope	1.00	Droughty	0.06
		Depth to hard bedrock	0.20	Too clayey	0.98		
				Cutbanks cave	0.10		
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Very limited		Very limited		Not limited	
		Low strength	1.00	Cutbanks cave	1.00		
TrC2:							
Trace	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	1.00	Slope	0.04
		Slope	0.04	Slope	0.04		
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Somewhat limited		Somewhat limited		Not limited	
		Low strength	0.01	Cutbanks cave	0.10		
				Too clayey	0.03		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and street		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WaC2:							
Waynesboro----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
		Low strength	0.01	Slope	0.04		
				Too clayey	0.03		
WaD2:							
Waynesboro----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	0.01	Cutbanks cave	0.10		
				Too clayey	0.03		

Table 12.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
AmB:					
Armour	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.08
AmC2:					
Armour	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
Ar:					
Arrington	95	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
BaF:					
Barfield	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
Gladdice	35	Very limited		Very limited	
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	20	Not rated		Not rated	
BeB2:					
Bewleyville	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
BeC2:					
Bewleyville	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
ByB:					
Byler	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
				Slope	0.08
		Depth to saturated zone	1.00	Depth to saturated zone	0.04
CaD2:					
Caneyville	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CaD2:					
Lonewood	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.47	Seepage	0.53
		Restricted permeability	0.46	Depth to hard bedrock	0.05
CrC2:					
Christian	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.53
		Depth to bedrock	0.41	Depth to soft bedrock	0.02
		Slope	0.04		
CrD2, CrE2:					
Christian	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.53
		Slope	1.00	Depth to soft bedrock	0.02
		Depth to bedrock	0.41		
CwD, CwE:					
Christian	50	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.53
		Slope	1.00	Depth to soft bedrock	0.02
		Depth to bedrock	0.41		
Faywood	40	Very limited		Very limited	
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
DeD2, DeE:					
Dellrose	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
DeF:					
Dellrose	65	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
Mimosa	30	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Depth to hard bedrock	0.32
		Slope	1.00		
		Depth to bedrock	0.73		
DfC2:					
Dewey	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.04		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
DkB2:					
Dickson	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
				Slope	0.32
		Depth to saturated zone	1.00	Depth to saturated zone	0.04
EwB:					
Etowah	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
EwC2:					
Etowah	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		
FeC2:					
Frederick	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04		
FeD2:					
Frederick	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00		
FeE2:					
Frederick	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00		
GnD:					
Garmon	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
Newbern	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.84		
				Depth to soft bedrock	1.00
				Slope	1.00
				Seepage	0.50
GnF:					
Garmon	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
GnF:					
Newbern	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00
				Seepage	0.50
Ha:					
Hamblen	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
HhC:					
Hawthorne	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Seepage	1.00
				Slope	1.00
HhD, HhF:					
Hawthorne	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
HoB:					
Holston	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
HoC2:					
Holston	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
HuB:					
Humphreys	95	Somewhat limited		Very limited	
		Depth to saturated zone	0.08	Seepage	1.00
				Slope	0.32
HuC:					
Humphreys	95	Somewhat limited		Very limited	
		Depth to saturated zone	0.08	Seepage	1.00
		Slope	0.04	Slope	1.00
Hw:					
Huntington	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
		Flooding	0.40	Flooding	0.40

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
Le:					
Lee	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
Ln:					
Lindside	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.72	Seepage	0.28
Lo:					
Lobelville	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
Me:					
Melvin	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.46	Seepage	0.53
MmD2:					
Mimosa	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	0.32
		Depth to bedrock	0.73		
MnC2:					
Minvale	90	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
MnD2, MnE2:					
Minvale	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53
MoB2:					
Monongahela	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Seepage	0.53
		Depth to saturated zone	1.00	Slope	0.08
				Depth to saturated zone	0.04

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
MoC2:					
Monongahela	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to cemented pan	1.00
		Depth to cemented pan	1.00	Slope	1.00
		Depth to saturated zone	1.00	Seepage	0.53
		Slope	0.04	Depth to saturated zone	0.04
MtB2:					
Mountview	85	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.53
				Slope	0.32
MtC2:					
Mountview	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
No:					
Nolin	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	0.53
		Restricted permeability	0.46	Depth to saturated zone	0.17
Oc:					
Ocana	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.84	Seepage	1.00
				Depth to saturated zone	0.17
Pq:					
Pits, quarry	85	Not rated		Not rated	
ReB:					
Renox	90	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.32
ReC2:					
Renox	90	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
SeC2:					
Sengtown	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
SeD2:					
Sengtown	85	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
SeE2:					
Sengtown	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.53
Sm:					
Skidmore	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
				Depth to saturated zone	1.00
Sn:					
Staser	85	Somewhat limited		Very limited	
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
SrB2:					
Sugargrove	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.32
SrC2:					
Sugargrove	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	1.00
SrD2:					
Sugargrove	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Su:					
Sullivan	90	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Restricted permeability	0.46	Seepage	0.53
		Depth to saturated zone	0.40		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
Sv:					
Sullivan	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.46	Seepage	0.53
		Depth to saturated zone	0.40		
TbD:					
Talbott	65	Very limited		Very limited	
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.84		
Rock outcrop	20	Not rated		Not rated	
TbE:					
Talbott	65	Very limited		Very limited	
		Restricted permeability	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	20	Not rated		Not rated	
TrB:					
Trace	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.32
		Restricted permeability	0.46		
TrC2:					
Trace	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	1.00
		Restricted permeability	0.46		
		Slope	0.04		
W:					
Water	100	Not rated		Not rated	
WaB2:					
Waynesboro	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.46	Seepage	0.53
				Slope	0.32
WaC2:					
Waynesboro	85	Somewhat limited		Very limited	
		Restricted permeability	0.46	Slope	1.00
				Seepage	0.53
		Slope	0.04		
WaD2:					
Waynesboro	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	0.53

Table 12.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
AmC2:							
Armour	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
Ar:							
Arrington	95	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Gladdice	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
BeC2:							
Bewleyville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
ByB:							
Byler	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
CaD2:							
Caneyville	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
Lonewood	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to bedrock	0.05	Depth to bedrock	0.05

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
CrC2:							
Christian	85	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.02	Hard to compact	1.00
		Slope	0.04			Slope	0.04
						Depth to bedrock	0.02
CrD2:							
Christian	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.02	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.02
CrE2:							
Christian	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.02	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	0.02
CwD:							
Christian	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.02	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.02
Faywood	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
CwE:							
Christian	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.02	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	0.02
Faywood	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
DeD2:							
Dellrose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Seepage	1.00	Slope	1.00
		Too clayey	0.50	Slope	1.00	Seepage	0.52
						Too clayey	0.50
						Gravel content	0.01
DeE:							
Dellrose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50	Seepage	1.00	Seepage	0.52
						Too clayey	0.50
						Gravel content	0.01

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DeF:							
Dellrose	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50	Seepage	1.00	Seepage	0.52
						Too clayey	0.50
						Gravel content	0.01
Mimosa	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.32	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	0.32
DfC2:							
Dewey	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04
DkB2:							
Dickson	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.96	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to saturated zone	0.98
EwB:							
Etowah	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
EwC2:							
Etowah	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
FeC2:							
Frederick	85	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Slope	0.04
FeD2:							
Frederick	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
FeE2:							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
GnD:							
Garmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.10

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GnD:							
Newbern	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	0.84
						Gravel content	0.01
GnF:							
Garmon	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.10
Newbern	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.01
Ha:							
Hamblen	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
HhC:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Slope	0.84
		Slope	0.84	Slope	0.84	Gravel content	0.56
						Seepage	0.52
HhD:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Gravel content	0.56
						Seepage	0.52
HhF:							
Hawthorne	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.56
						Seepage	0.52
HoB:							
Holston	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
HoC2:							
Holston	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
HuB:							
Humphreys	95	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.52
		Seepage	1.00	Seepage	1.00	Too clayey	0.50
		Too clayey	0.50			Gravel content	0.47

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
HuC:							
Humphreys	95	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.52
		Seepage	1.00	Seepage	1.00	Too clayey	0.50
		Too clayey	0.50	Slope	0.04	Gravel content	0.47
		Slope	0.04			Slope	0.04
Hw:							
Huntington	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
Le:							
Lee	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.22
Ln:							
Lindside	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Lo:							
Lobelville	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Gravel content	0.88
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
Me:							
Melvin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
MmD2:							
Mimosa	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.32	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.32
MnC2:							
Minvale	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Gravel content	0.18
						Slope	0.04
MnD2, MnE2:							
Minvale	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.18

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
MoB2:							
Monongahela	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
				Depth to saturated zone	0.96	Depth to saturated zone	0.98
MoC2:							
Monongahela	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to cemented pan	1.00	Depth to cemented pan	1.00
		Slope	0.04	Depth to saturated zone	0.96	Depth to saturated zone	0.98
				Slope	0.04	Slope	0.04
MtB2:							
Mountview	85	Very limited		Not limited		Very limited	
		Too clayey	1.00			Hard to compact	1.00
MtC2:							
Mountview	85	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Slope	0.04
No:							
Nolin	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
Oc:							
Ocana	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.52
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.20
		Seepage	1.00	Seepage	1.00		
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.04
ReC2:							
Renox	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Gravel content	0.09
						Slope	0.04
SeC2:							
Sengtown	85	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Gravel content	0.55
						Slope	0.04

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
SeD2:							
Sengtown------------	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
						Gravel content	0.55
SeE2:							
Sengtown------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
						Gravel content	0.55
Sm:							
Skidmore------------	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Gravel content	0.99
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.52
		Seepage	1.00	Seepage	1.00		
Sn:							
Staser--------------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.22
		Flooding	0.40	Flooding	0.40	Gravel content	0.01
SrB2:							
Sugargrove----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.22
						Gravel content	0.07
SrC2:							
Sugargrove----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.22
		Slope	0.04	Slope	0.04	Gravel content	0.07
						Slope	0.04
SrD2:							
Sugargrove----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.22
						Gravel content	0.07
Su:							
Sullivan------------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00		
Sv:							
Sullivan------------	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Trench sanitary landfill: Value	Area sanitary landfill: Rating class and limiting features	Area sanitary landfill: Value	Daily cover for landfill: Rating class and limiting features	Daily cover for landfill: Value
TbD:							
Talbott	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.84	Too clayey	1.00
		Slope	0.84			Hard to compact	1.00
						Slope	0.84
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Very limited		Not limited		Very limited	
		Seepage	1.00			Seepage	1.00
		Too clayey	0.50			Too clayey	0.50
TrC2:							
Trace	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Slope	0.04	Seepage	1.00
		Too clayey	0.50			Too clayey	0.50
		Slope	0.04			Slope	0.04
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
WaC2:							
Waynesboro	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Hard to compact	0.50
						Slope	0.04
WaD2:							
Waynesboro	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50

Table 13.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
AmB, AmC2:					
Armour	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ar:					
Arrington	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BaF:					
Barfield	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Gladdice	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
BeB2, BeC2:					
Bewleyville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ByB:					
Byler	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CaD2:					
Caneyville	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lonewood	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CrC2, CrD2, CrE2:					
Christian	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CwD, CwE:					
Christian	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Faywood	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
DeD2, DeE:					
Dellrose	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DeF:					
Dellrose	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mimosa	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DfC2:					
Dewey	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DkB2:					
Dickson	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
EwB, EwC2:					
Etowah	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
FeC2, FeD2, FeE2:					
Frederick	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GnD:					
Garmon	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Newbern	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GnF:					
Garmon	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Newbern	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ha:					
Hamblen	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HhC, HhD, HhF:					
Hawthorne	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
HoB, HoC2:					
Holston-------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HuB, HuC:					
Humphreys-----------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hw:					
Huntington----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Le:					
Lee-----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ln:					
Lindside------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lo:					
Lobelville----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Me:					
Melvin--------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MmD2:					
Mimosa--------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MnC2, MnD2, MnE2:					
Minvale-------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MoB2, MoC2:					
Monongahela---------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MtB2, MtC2:					
Mountview-----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
No:					
Nolin---------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
Oc:					
Ocana	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pq:					
Pits, quarry	85	Not rated		Not rated	
ReB, ReC2:					
Renox	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SeC2, SeD2, SeE2:					
Sengtown	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sm:					
Skidmore	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.06
Sn:					
Staser	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
SrB2, SrC2, SrD2:					
Sugargrove	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Su:					
Sullivan	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sv:					
Sullivan	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
TbD, TbE:					
Talbott	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
TrB, TrC2:					
Trace	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.44	Thickest layer	0.00
W:					
Water	100	Not rated		Not rated	
WaB2, WaC2, WaD2:					
Waynesboro	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
AmB:							
Armour	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.78	Too clayey	0.29
		Too clayey	0.50			Hard to reclaim	0.98
		Too acid	0.74				
		Water erosion	0.90				
AmC2:							
Armour	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.78	Too clayey	0.29
		Too clayey	0.50			Slope	0.96
		Too acid	0.74			Hard to reclaim	0.98
		Water erosion	0.90				
Ar:							
Arrington	95	Fair		Poor		Good	
		Water erosion	0.99	Low strength	0.00		
BaF:							
Barfield	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.12		
Gladdice	35	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.08	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.35	Slope	0.00	Depth to bedrock	0.35
		Low content of organic matter	0.88	Shrink-swell	0.12	Rock fragments	0.95
Rock outcrop	20	Not rated		Not rated		Not rated	
BeB2:							
Bewleyville	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.98
		Too acid	0.54				
		Water erosion	0.90				
BeC2:							
Bewleyville	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.96
		Too acid	0.54			Too acid	0.98
		Water erosion	0.90				
ByB:							
Byler	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.24
		Too acid	0.74	Depth to saturated zone	0.24	Rock fragments	0.97
		Water erosion	0.90				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
CaD2:							
Caneyville	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
		Too acid	0.50	Slope	0.98	Depth to bedrock	0.54
		Depth to bedrock	0.54	Shrink-swell	0.99		
		Droughty	0.84				
		Water erosion	0.90				
Lonewood	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Low strength	0.00	Slope	0.00
		Too acid	0.32	Depth to bedrock	0.95	Hard to reclaim	0.08
		Water erosion	0.99	Slope	0.98	Too acid	0.88
CrC2:							
Christian	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Rock fragments	0.12
		Too acid	0.32	Depth to bedrock	0.98	Too acid	0.88
		Water erosion	0.99			Slope	0.96
CrD2:							
Christian	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Too clayey	0.00
		Too acid	0.32	Slope	0.98	Rock fragments	0.12
		Water erosion	0.99	Depth to bedrock	0.98	Too acid	0.88
CrE2:							
Christian	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.32	Shrink-swell	0.87	Rock fragments	0.12
		Water erosion	0.99	Depth to bedrock	0.98	Too acid	0.88
CwD:							
Christian	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Too clayey	0.00
		Too acid	0.32	Slope	0.98	Rock fragments	0.12
		Water erosion	0.99	Depth to bedrock	0.98	Too acid	0.88
Faywood	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.11	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Depth to bedrock	0.16
		Depth to bedrock	0.16	Slope	0.98	Rock fragments	0.95
		Water erosion	0.99				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
CwE:							
Christian-----------	50	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.87	Rock fragments	0.12
		Too acid	0.32	Depth to bedrock	0.98	Too acid	0.88
		Water erosion	0.99				
Faywood-------------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.11	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Slope	0.00	Depth to bedrock	0.54
				Shrink-swell	0.94	Rock fragments	0.95
		Depth to bedrock	0.54				
		Water erosion	0.99				
DeD2:							
Dellrose------------	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.98	Slope	0.00
						Rock fragments	0.03
		Too acid	0.54			Hard to reclaim	0.95
						Too acid	0.98
DeE:							
Dellrose------------	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.03
		Too acid	0.54			Hard to reclaim	0.95
						Too acid	0.98
DeF:							
Dellrose------------	65	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.03
		Too acid	0.54			Hard to reclaim	0.95
						Too acid	0.98
Mimosa--------------	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Too clayey	0.00
				Shrink-swell	0.15	Too acid	0.98
		Too acid	0.54	Depth to bedrock	0.68		
		Water erosion	0.99				
DfC2:							
Dewey---------------	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.99	Too clayey	0.00
		Low content of organic matter	0.12			Too acid	0.88
						Slope	0.96
		Too acid	0.50			Rock fragments	0.97
DkB2:							
Dickson-------------	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.24
				Depth to saturated zone	0.24		
		Too acid	0.50			Too acid	0.88
		Droughty	0.54				
		Water erosion	0.90				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
EwB:							
Etowah	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too acid	0.88
		Too acid	0.50			Rock fragments	0.97
		Water erosion	0.99				
EwC2:							
Etowah	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Low strength	0.22	Too acid	0.88
		Too acid	0.50			Slope	0.97
		Water erosion	0.99			Rock fragments	0.97
FeC2:							
Frederick	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Slope	0.96
		Too acid	0.54			Too acid	0.98
FeD2:							
Frederick	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.87	Slope	0.00
		Too acid	0.54	Slope	0.98	Too acid	0.98
FeE2:							
Frederick	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Too clayey	0.00
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
GnD:							
Garmon	50	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.11	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Low strength	0.00	Depth to bedrock	0.46
		Too acid	0.88				
Newbern	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.03
		Low content of organic matter	0.12			Slope	0.16
GnF:							
Garmon	45	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.11	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Low strength	0.00	Depth to bedrock	0.46
		Too acid	0.88				
Newbern	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.12			Rock fragments	0.03

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
Ha:							
Hamblen	90	Fair		Fair		Fair	
		Low content of organic matter	0.50	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Too acid	0.97			Rock fragments	0.97
HhC:							
Hawthorne	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.05			Depth to bedrock	0.05
		Low content of organic matter	0.12			Slope	0.16
						Too acid	0.59
		Too acid	0.50				
HhD:							
Hawthorne	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.05	Slope	0.98	Slope	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.05
						Too acid	0.59
		Too acid	0.50				
HhF:							
Hawthorne	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.05	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.05
						Too acid	0.59
		Too acid	0.50				
HoB:							
Holston	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Too acid	0.88
						Rock fragments	0.97
		Too acid	0.50				
HoC2:							
Holston	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Too acid	0.88
						Slope	0.96
		Too acid	0.50			Rock fragments	0.97
HuB:							
Humphreys	95	Fair		Poor		Poor	
		Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.00
						Hard to reclaim	0.50
		Too acid	0.54			Too clayey	0.57
		Too clayey	0.98			Too acid	0.98
HuC:							
Humphreys	95	Fair		Poor		Poor	
		Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.00
						Hard to reclaim	0.50
		Too acid	0.54			Too clayey	0.57
		Too clayey	0.98			Slope	0.96
						Too acid	0.98
Hw:							
Huntington	85	Fair		Good		Fair	
		Low content of organic matter	0.50			Rock fragments	0.50

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
Le:							
Lee	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.50			Rock fragments	0.00
						Hard to reclaim	0.68
						Too acid	0.88
Ln:							
Lindside	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Depth to saturated zone	0.02
		Water erosion	0.99	Depth to saturated zone	0.02		
Lo:							
Lobelville	85	Fair		Fair		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.53	Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.00
						Depth to saturated zone	0.53
						Too acid	0.98
Me:							
Melvin	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Water erosion	0.90				
MmD2:							
Mimosa	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.15	Slope	0.00
		Too acid	0.54	Depth to bedrock	0.68	Too acid	0.98
		Water erosion	0.99	Slope	0.98		
MnC2:							
Minvale	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.32			Hard to reclaim	0.50
						Too acid	0.88
						Slope	0.96
MnD2, MnE2:							
Minvale	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.98	Rock fragments	0.00
		Too acid	0.32			Slope	0.00
						Hard to reclaim	0.50
						Too acid	0.88
MoB2:							
Monongahela	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to cemented pan	0.00	Depth to saturated zone	0.24
		Too acid	0.32	Depth to saturated zone	0.24	Depth to cemented pan	0.36
		Depth to cemented pan	0.36	Low strength	0.78	Too acid	0.88
		Droughty	0.54				
		Water erosion	0.90				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
MoC2:							
Monongahela	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Depth to cemented pan	0.00	Depth to saturated zone	0.24
		Too acid	0.32	Depth to saturated zone	0.24	Depth to cemented pan	0.36
		Depth to cemented pan	0.36	Low strength	0.78	Too acid	0.88
		Droughty	0.54			Slope	0.96
		Water erosion	0.90				
MtB2:							
Mountview	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.88
		Too acid	0.32				
		Water erosion	0.90				
MtC2:							
Mountview	85	Fair		Poor		Fair	
		Low content of organic matter	0.12	Low strength	0.00	Too acid	0.88
		Too acid	0.32			Slope	0.96
		Water erosion	0.90				
No:							
Nolin	85	Fair		Poor		Good	
		Water erosion	0.90	Low strength	0.00		
Oc:							
Ocana	85	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.68
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
ReC2:							
Renox	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
						Slope	0.96
SeC2:							
Sengtown	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.96	Rock fragments	0.00
						Hard to reclaim	0.18
		Too acid	0.54			Slope	0.96
						Too acid	0.98
SeD2:							
Sengtown	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.96	Rock fragments	0.00
				Slope	0.98	Slope	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Too acid	0.98

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
SeE2:							
Sengtown	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.96	Rock fragments	0.00
		Too acid	0.54			Hard to reclaim	0.18
						Too acid	0.98
Sm:							
Skidmore	85	Fair		Good		Poor	
		Droughty	0.06			Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.28
Sn:							
Staser	85	Good		Good		Poor	
						Rock fragments	0.00
						Hard to reclaim	0.92
SrB2:							
Sugargrove	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
						Too acid	0.88
		Too acid	0.50			Depth to bedrock	0.93
		Depth to bedrock	0.93				
		Droughty	0.99				
SrC2:							
Sugargrove	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
						Too acid	0.88
		Too acid	0.50			Depth to bedrock	0.93
		Depth to bedrock	0.93			Slope	0.96
		Droughty	0.99				
SrD2:							
Sugargrove	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.98	Rock fragments	0.00
		Too acid	0.50			Too acid	0.88
		Depth to bedrock	0.93			Depth to bedrock	0.93
		Droughty	0.99				
Su:							
Sullivan	90	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.97				
Sv:							
Sullivan	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.97				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
TbD:							
Talbott	65	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.10	Low strength	0.00	Slope	0.16
		Low content of organic matter	0.12	Shrink-swell	0.87	Depth to bedrock	0.79
		Depth to bedrock	0.79				
		Too acid	0.84				
		Water erosion	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
TbE:							
Talbott	65	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.10	Low strength	0.00	Too clayey	0.00
		Low content of organic matter	0.12	Slope	0.00	Depth to bedrock	0.79
				Shrink-swell	0.87		
		Depth to bedrock	0.79				
		Too acid	0.84				
		Water erosion	0.99				
Rock outcrop	20	Not rated		Not rated		Not rated	
TrB:							
Trace	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Too acid	0.74				
		Water erosion	0.99				
TrC2:							
Trace	85	Fair		Good		Poor	
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Slope	0.96
		Too acid	0.74				
		Water erosion	0.99				
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2:							
Waynesboro	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.99	Too clayey	0.00
		Low content of organic matter	0.12			Too acid	0.88
		Too acid	0.50				
WaC2:							
Waynesboro	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.99	Too clayey	0.00
		Low content of organic matter	0.12			Too acid	0.88
						Slope	0.96
		Too acid	0.50				
WaD2:							
Waynesboro	85	Poor		Fair		Poor	
		Too clayey	0.00	Slope	0.98	Slope	0.00
		Low content of organic matter	0.12	Low strength	0.99	Too clayey	0.00
						Too acid	0.88
		Too acid	0.50				

Table 14.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmB:							
Armour	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.79	Depth to water	1.00
AmC2:							
Armour	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00
Ar:							
Arrington	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.85	Depth to water	1.00
BaF:							
Barfield	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.97	Hard to pack	0.91		
Gladdice	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.97	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Hard to pack	0.12		
Rock outcrop	20	Somewhat limited		Not rated		Not rated	
		Slope	0.97				
BeB2, BeC2:							
Bewleyville	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.24	Depth to water	1.00
ByB:							
Byler	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.57		
CaD2:							
Caneyville	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Slope	0.04	Piping	0.01		
Lonewood	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.38	Depth to water	1.00
		Slope	0.04	Thin layer	0.01		
		Depth to bedrock	0.01				
CrC2:							
Christian	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.01	Hard to pack	0.07	Depth to water	1.00
				Thin layer	0.01		
CrD2:							
Christian	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Hard to pack	0.07	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
CrE2:							
Christian	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Hard to pack	0.07	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
CwD:							
Christian	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Hard to pack	0.07	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
Faywood	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.96	Thin layer	0.96	Depth to water	1.00
		Slope	0.04	Hard to pack	0.18		
CwE:							
Christian	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Hard to pack	0.07	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
Faywood	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Slope	0.50				
DeD2:							
Dellrose	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.28	Depth to water	1.00
		Slope	0.04				
DeE:							
Dellrose	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.29	Depth to water	1.00
		Slope	0.64				
DeF:							
Dellrose	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.29	Depth to water	1.00
		Slope	0.88				
Mimosa	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.88	Hard to pack	0.21	Depth to water	1.00
		Depth to bedrock	0.08	Thin layer	0.08		
DfC2:							
Dewey	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.03			Depth to water	1.00
DkB2:							
Dickson	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.42		
EwB:							
Etowah	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.93	Depth to water	1.00
EwC2:							
Etowah	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.91	Depth to water	1.00

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FeC2:							
Frederick----------	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.03	Hard to pack	0.85	Depth to water	1.00
FeD2:							
Frederick----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Hard to pack	0.85	Depth to water	1.00
		Seepage	0.03				
FeE2:							
Frederick----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Hard to pack	0.85	Depth to water	1.00
		Seepage	0.03				
GnD:							
Garmon-------------	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.88	Depth to water	1.00
		Slope	1.00	Piping	0.62		
		Depth to bedrock	0.88				
Newbern------------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.01	Piping	1.00		
GnF:							
Garmon-------------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.88	Depth to water	1.00
		Slope	1.00	Piping	0.62		
		Depth to bedrock	0.88				
Newbern------------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Piping	1.00		
Ha:							
Hamblen------------	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Ponding	1.00	Slow refill	0.28
				Piping	0.99	Cutbanks cave	0.10
				Depth to saturated zone	0.86	Depth to water	0.06
HhC:							
Hawthorne----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to bedrock	0.34				
		Slope	0.01				
HhD:							
Hawthorne----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.99	Depth to water	1.00
		Depth to bedrock	0.34				
		Slope	0.04				
HhF:							
Hawthorne----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.99	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.34				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoB, HoC2:							
Holston-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
HuB, HuC:							
Humphreys-----------	95	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
Hw:							
Huntington----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
Le:							
Lee-----------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.28
				Piping	1.00		
Ln:							
Lindside------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
						Cutbanks cave	0.10
				Piping	1.00		
Lo:							
Lobelville----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.28
						Depth to water	0.01
Me:							
Melvin--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Ponding	1.00	Slow refill	0.28
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
MmD2:							
Mimosa--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.08	Hard to pack	0.21	Depth to water	1.00
		Slope	0.04	Thin layer	0.08		
MnC2:							
Minvale-------------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.81	Depth to water	1.00
MnD2, MnE2:							
Minvale-------------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.81	Depth to water	1.00
		Slope	0.04				
MoB2, MoC2:							
Monongahela---------	85	Somewhat limited		Very limited		Very limited	
		Depth to cemented pan	0.91	Depth to saturated zone	1.00	Depth to water	1.00
		Seepage	0.72	Piping	1.00		
				Thin layer	0.91		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MtB2, MtC2:							
Mountview	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.12	Depth to water	1.00
No:							
Nolin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.78	Depth to water	0.96
						Slow refill	0.28
						Cutbanks cave	0.10
Oc:							
Ocana	85	Very limited		Not limited		Very limited	
		Seepage	1.00			Cutbanks cave	1.00
						Depth to water	0.96
Pq:							
Pits, quarry	85	Not rated		Not rated		Not rated	
ReB:							
Renox	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
ReC2:							
Renox	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	0.99	Depth to water	1.00
SeC2:							
Sengtown	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Hard to pack	0.19	Depth to water	1.00
SeD2:							
Sengtown	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Hard to pack	0.19	Depth to water	1.00
		Slope	0.04				
SeE2:							
Sengtown	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Hard to pack	0.19	Depth to water	1.00
		Slope	0.50				
Sm:							
Skidmore	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.09	Cutbanks cave	1.00
						Depth to water	0.54
				Seepage	0.06		
Sn:							
Staser	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
SrB2, SrC2:							
Sugargrove	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.96	Depth to water	1.00
		Depth to bedrock	0.03	Thin layer	0.66		
SrD2:							
Sugargrove	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.96	Depth to water	1.00
		Slope	0.04	Thin layer	0.66		
		Depth to bedrock	0.03				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
Su:							
Sullivan	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Ponding	1.00	Depth to water	1.00
Sv:							
Sullivan	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			Depth to water	1.00
TbD:							
Talbott	65	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Slope	0.01	Hard to pack	0.44		
Rock outcrop	20	Somewhat limited		Not rated		Not rated	
		Slope	0.01				
TbE:							
Talbott	65	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Slope	0.50	Hard to pack	0.44		
Rock outcrop	20	Somewhat limited		Not rated		Not rated	
		Slope	0.50				
TrB, TrC2:							
Trace	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.44		
W:							
Water	100	Not rated		Not rated		Not rated	
WaB2, WaC2:							
Waynesboro	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			Depth to water	1.00
WaD2:							
Waynesboro	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			Depth to water	1.00
		Slope	0.04				

Table 15.—Engineering Index Properties

(Absence of an entry indicates that the data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
AmB:												
Armour----------	0-14	Silt loam	ML, CL-ML, CL	A-4	0	0	90-100	80-100	75-95	70-90	25-35	5-10
	14-29	Silty clay loam, silt loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	29-70	Silty clay loam, silty clay, clay	MH, GM, GC, CL	A-4, A-7, A-6	0	0-3	60-100	50-95	45-90	40-85	35-53	9-23
AmC2:												
Armour----------	0-5	Silt loam	CL-ML, CL, ML	A-4	0	0	90-100	80-100	75-95	70-90	25-35	5-10
	5-29	Silty clay loam, silt loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	29-70	Silty clay loam, silty clay, clay	CL, GC, GM, MH	A-4, A-6, A-7	0	0-3	60-100	50-95	45-90	40-85	35-53	9-23
Ar:												
Arrington-------	0-37	Silt loam	ML, CL-ML, CL	A-6, A-4	0	0	100	90-100	85-95	75-95	25-40	4-15
	37-55	Silty clay loam, loam, silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	85-100	75-95	25-40	4-15
	55-80	Silt loam, silty clay loam	ML, MH, CL	A-4, A-6, A-7	0	0	85-100	75-100	65-95	55-95	28-55	8-25
BaF:												
Barfield--------	0-7	Silty clay loam, silty clay	MH, CL, CH	A-7, A-6	0-5	0-10	90-100	85-95	80-90	75-85	35-65	12-35
	7-14	Clay	CH, CL, MH	A-7, A-6	0	0	70-100	65-90	60-85	55-80	35-70	14-40
	14-16	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Gladdice--------	0-9	Silty clay loam	CL-ML, CL	A-4, A-6, A-7	0	0-15	95-100	90-100	85-100	70-95	25-49	6-22
	9-28	Clay, silty clay, silty clay loam	CH, CL, MH	A-7	0	0-15	95-100	90-100	85-100	75-95	45-72	20-40
	28-30	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
BeB2, BeC2:												
Bewleyville-----	0-9	Silt loam	ML, CL-ML	A-4	0	0	100	95-100	95-100	85-100	20-30	2-7
	9-30	Silt loam, silty clay loam	CL	A-7, A-6	0	0	95-100	95-100	90-100	85-100	30-45	11-22
	30-57	Silty clay loam, silt loam	CL	A-7, A-6	0	0	95-100	95-100	90-100	85-100	30-45	11-22
	57-77	Clay, silty clay loam	MH, ML, CH, CL	A-7, A-6	0	0-5	75-100	75-100	70-95	60-95	35-65	12-32
ByB:												
Byler-----------	0-9	Silt loam	ML, CL-ML, CL	A-4	0	0	100	95-100	85-95	75-90	20-30	3-10
	9-20	Silt loam	CL, CL-ML, ML	A-4	0	0	100	95-100	85-95	75-90	20-30	3-10
	20-58	Silt loam, silty clay loam, gravelly silty clay loam	ML, CL	A-4, A-7, A-6	0	0-5	80-100	75-100	70-100	60-95	30-45	8-20
	58-82	Silty clay loam, clay, gravelly clay	CL, MH	A-7	0	0-10	65-100	60-100	55-95	50-90	40-60	12-25
	82-95	Gravelly silty clay loam, gravelly clay, clay	MH, CL	A-7	0	0-10	65-100	60-100	55-95	50-90	40-60	12-25
CaD2:												
Caneyville------	0-10	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0-3	90-100	85-100	75-100	60-95	20-35	2-12
	10-19	Loam, silt loam, silty clay loam	CL	A-6, A-4	0	0	100	90-100	85-95	70-90	25-39	9-18
	19-36	Clay, silty clay, silty clay loam	CH, CL	A-7	0	0-3	90-100	85-100	75-100	65-100	42-70	20-45
	36-38	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
CaD2:												
Lonewood--------	0-4	Silt loam	ML, CL-ML, CL	A-4	0	0	100	90-100	85-100	75-90	18-26	3-9
	4-29	Loam, clay loam, silty clay, loam	CL	A-7, A-6	0	0	95-100	85-100	75-90	65-85	29-48	10-23
	29-45	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	85-100	75-90	65-85	29-48	10-23
	45-61	Sandy loam, loam, channery clay loam	CL, GC, SC	A-7, A-6, A-4, A-2	0-5	5-25	45-90	25-85	25-80	25-75	25-48	9-23

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CrC2, CrD2, CrE2:												
Christian-------	0-8	Loam, silt loam	CL-ML, ML	A-4	0	0	85-100	85-100	70-95	40-85	15-30	NP-7
	8-18	Clay loam, silty clay loam, gravelly silty clay loam	SC, ML, CL, GC	A-6, A-4	0	0	70-100	50-100	40-100	36-95	20-40	2-20
	18-48	Clay, silty clay loam, gravelly clay	CH, CL, GC, SC	A-7	0	0	70-100	50-100	45-100	40-90	41-70	20-42
	48-57	Extremely channery clay loam, gravelly clay, clay, silty clay loam	SC, GC, CL, CH	A-7	0	0	70-100	50-100	45-100	40-90	41-70	20-42
	57-59	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
CwD, CwE:												
Christian-------	0-8	Loam, silt loam	ML, CL-ML	A-4	0	0	85-100	85-100	70-95	40-85	15-30	NP-7
	8-18	Clay loam, silty clay loam, gravelly silty clay loam	CL, GC, ML, SC	A-4, A-6	0	0	70-100	50-100	40-100	36-95	20-40	2-20
	18-48	Clay, silty clay loam, gravelly clay	SC, CH, CL, GC	A-7	0	0	70-100	50-100	45-100	40-90	41-70	20-42
	48-57	Extremely channery clay loam, gravelly clay, clay, silty clay loam	CH, CL, GC, SC	A-7	0	0	70-100	50-100	45-100	40-90	41-70	20-42
	57-59	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Faywood---------	0-8	Silt loam	ML, CL-ML, CL	A-4	0	0-15	100	95-100	90-100	85-100	25-35	4-15
	8-25	Clay, silty clay loam, silty clay	CL, CH	A-7	0	0-15	90-100	90-100	85-100	75-100	42-70	20-45
	25-27	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
DeD2:												
Dellrose--------	0-5	Gravelly silt loam	GC, SC, CL-ML, CL	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	5-22	Gravelly silt loam	GC, CL-ML, CL, SC	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	22-66	Gravelly silty clay loam	ML, SC, GC, CL	A-7, A-6, A-4	0	0-15	60-90	55-90	50-75	40-70	30-45	8-18
	66-80	Clay, silty clay, gravelly silty clay loam	CH, MH	A-7	0	0	95-100	90-100	85-95	80-95	51-65	25-35
DeE:												
Dellrose--------	0-7	Gravelly silt loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	7-22	Gravelly silt loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	22-66	Gravelly silty clay loam	GC, CL, SC, ML	A-7, A-6, A-4	0	0-15	60-90	55-90	50-75	40-70	30-45	8-18
	66-80	Clay, silty clay, gravelly silty clay loam	MH, CH	A-7	0	0	95-100	90-100	85-95	80-95	51-65	25-35
DeF:												
Dellrose--------	0-7	Gravelly silt loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	7-22	Gravelly silt loam	SC, CL, CL-ML, GC	A-6, A-4	0	0-10	55-90	55-85	45-75	40-70	20-35	5-15
	22-66	Gravelly silty clay loam	SC, GC, CL, ML	A-7, A-6, A-4	0	0-15	60-90	55-90	50-75	40-70	30-45	8-18
	66-80	Clay, silty clay, gravelly silty clay loam	MH, CH	A-7	0	0	95-100	90-100	85-95	80-95	51-65	25-35
Mimosa----------	0-11	Silt loam	ML, CL	A-7, A-6, A-4	0	0	80-100	75-100	65-95	60-90	25-45	7-20
	11-51	Clay, silty clay	MH, CH	A-7	0	0	95-100	90-100	85-95	80-95	51-65	25-35
	51-53	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
DfC2:												
Dewey-----------	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0	90-100	80-100	75-95	65-80	24-30	5-11
	7-14	Silty clay loam, silty clay, clay	CL	A-6	0	0	90-100	80-100	75-95	70-85	27-40	12-20
	14-70	Clay, silty clay	CH, CL, MH, ML	A-6, A-7	0	0-2	85-100	75-100	70-95	65-85	38-68	12-34

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
DkB2:												
Dickson---------	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	90-100	75-95	20-28	2-7
	9-20	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	95-100	85-95	25-38	5-17
	20-38	Silt loam, silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	95-100	95-100	85-95	25-38	5-17
	38-79	Clay, cherty silty clay loam, cherty clay	CL, GC, MH, ML	A-7, A-6	0	0-20	70-100	60-100	55-100	45-95	35-65	12-30
EwB:												
Etowah----------	0-8	Loam, silt loam	SC-SM, CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-95	45-70	20-30	3-10
	8-72	Clay loam, silty clay loam	CL	A-6	0	0	80-100	75-100	70-95	65-85	25-35	10-15
EwC2:												
Etowah----------	0-5	Loam, silt loam	SC-SM, ML, CL, CL-ML	A-4	0	0	80-100	75-100	70-95	45-70	20-30	3-10
	5-72	Clay loam, silty clay loam	CL	A-6	0	0	80-100	75-100	70-95	65-85	25-35	10-15
FeC2, FeD2, FeE2:												
Frederick-------	0-6	Loam	ML, GM, GC, CL	A-6, A-4	0	0-10	60-80	50-75	40-70	35-65	15-35	NP-15
	6-10	Loam	GC, CL, GM, ML	A-6, A-4	0	0-10	60-80	50-75	40-70	35-65	15-35	NP-15
	10-16	Clay loam, clay, gravelly silty clay loam	SC, MH, CH, SM	A-7	0	0-5	80-100	50-95	45-90	35-85	50-70	20-40
	16-31	Clay, silty clay	CH	A-7	0	0-5	90-100	85-100	70-100	60-85	60-85	30-50
	31-66	Clay, silty clay	CH	A-7	0	0-5	90-100	85-100	70-100	60-85	60-85	30-50
	66-84	Gravelly clay, clay	CH	A-7	0	0-5	90-100	85-100	70-100	50-75	50-75	25-45

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GnD, GnF:												
Garmon----------	0-3	Channery silt loam	GC-GM, GC, CL-ML, CL	A-6, A-4	---	0-10	55-80	50-75	45-75	40-70	25-35	5-15
	3-6	Channery silt loam, shaly silty clay loam, loam	SC-SM, GC-GM, CL, CL-ML	A-6, A-4	---	0-15	60-85	50-85	45-80	36-70	20-40	5-20
	6-20	Channery silt loam, channery silty clay loam	CL, CL-ML, GC-GM, SC-SM	A-6, A-4	---	0-15	60-85	50-85	45-80	36-70	20-40	5-20
	20-29	Very channery silt loam, channery silt loam, channery silty clay loam	GC-GM, CL, CL-ML, SC	A-6, A-4	---	0-15	60-85	50-85	45-80	36-70	20-40	5-20
	29-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Newbern---------	0-1	Channery silt loam	ML, CL-ML, CL	A-4	0	0-5	80-100	75-95	65-95	50-90	10-20	NP-10
	1-10	Channery silt loam, channery loam, silt loam	GM, ML, CL-ML, CL	A-6, A-2, A-4	0	0-5	60-100	50-95	30-95	20-90	10-30	NP-15
	10-14	Very channery silt loam, channery silt loam, channery loam	ML, GM, CL, CL-ML	A-6, A-4, A-2	0	0-5	60-100	50-95	30-95	20-90	10-30	NP-15
	14-18	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Ha:												
Hamblen---------	0-6	Loam, silt loam	CL, CL-ML, ML	A-6, A-4	0	0-2	90-100	80-100	65-95	55-85	22-38	3-14
	6-65	Loam, silt loam	ML, CL-ML, CL	A-6, A-4	0	0-2	80-100	75-100	60-95	55-85	22-40	3-17

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HhC, HhD, HhF:												
Hawthorne-------	0-1	Gravelly silt loam	CL, GC-GM, GM, ML	A-4	0	0-10	60-80	55-75	50-70	40-65	18-30	3-9
	1-4	Very gravelly silt loam, very channery silt loam, very channery silty clay loam	CL-ML, GC-GM, GM, ML	A-2, A-4, A-6	0-5	0-15	55-75	45-70	40-65	30-60	20-35	3-12
	4-14	Very channery silt loam, very gravelly silt loam, very channery silty clay loam	CL-ML, GC-GM, GC, ML	A-4, A-2, A-6	0-5	0-15	55-75	45-70	40-65	30-60	20-35	3-12
	14-23	Extremely channery silt loam, very channery silt loam, very channery silty clay loam	CL-ML, GC-GM, GC, ML	A-6, A-4, A-2	0-5	0-15	55-75	45-70	40-65	32-60	20-35	3-12
	23-26	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
HoB, HoC2:												
Holston---------	0-20	Loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0-5	80-100	75-100	65-100	30-75	15-22	NP-6
	20-65	Clay loam, loam, sandy clay loam	CL, ML, SC-SM, SM	A-4, A-6	0	0-5	80-100	75-100	50-100	30-80	27-44	12-25

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HuB, HuC:												
Humphreys-------	0-5	Gravelly silt loam	GC-GM, ML, CL-ML, GC	A-4	---	0-5	60-75	55-75	50-70	35-55	18-28	3-10
	5-17	Gravelly silty clay loam, gravelly silt loam	CL, SC, GC	A-6	---	0-5	55-75	50-75	45-70	40-60	28-40	10-16
	17-35	Gravelly clay loam, gravelly silty clay loam, gravelly silt loam	GC, CL, SC	A-6, A-4, A-2	---	0-10	45-75	40-75	30-65	20-55	25-35	8-15
	35-55	Gravelly silty clay loam, gravelly silt loam	CL, SC, GC	A-6	---	0-5	55-75	50-75	45-70	40-60	28-40	10-16
	55-80	Very gravelly silty clay loam, gravelly silty clay loam, gravelly silt loam	SC, GC, CL	A-6	---	0-5	55-75	50-75	45-70	40-60	28-40	10-16
Hw:												
Huntington------	0-10	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	95-100	85-100	60-95	25-40	5-15
	10-19	Silty clay loam, silt loam	ML, CL-ML, CL	A-6, A-4	0	0	95-100	95-100	85-100	60-95	25-40	5-20
	19-72	Silty clay loam	ML, CL-ML, SC, SM	A-4, A-2	0	0-2	95-100	60-100	50-90	30-75	15-30	NP-10
Le:												
Lee-------------	0-8	Gravelly silt loam	ML, GC-GM, CL, GM	A-4	0	0-3	65-85	60-80	50-70	40-70	20-35	3-10
	8-38	Gravelly silt loam, gravelly loam	CL-ML, GC-GM, GM, ML	A-4	0	0-5	60-75	55-75	45-70	36-65	20-35	3-10
	38-62	Gravelly silt loam, gravelly loam	GM, CL-ML, GC-GM, ML	A-4	0	0-5	60-75	55-75	45-70	36-65	20-35	3-10
Ln:												
Lindside--------	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	95-100	80-100	55-90	20-35	2-15
	7-40	Silt loam, silty clay loam	CL, CL-ML, ML	A-6, A-4	0	0	100	95-100	90-100	70-95	25-40	4-18
	40-65	Silty clay loam, silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	95-100	90-100	70-95	25-40	4-18

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Lo:												
Lobelville------	0-3	Loam	ML, GM, GC-GM, CL-ML	A-4	0	0-5	65-90	55-80	50-75	45-65	15-30	NP-7
	3-23	Loam, gravelly loam	CL, ML, GM, GC-GM	A-6, A-4	0	0-5	65-90	50-80	45-70	40-65	22-35	3-12
	23-61	Gravelly silt loam, gravelly loam, very gravelly loam	ML, GM, GC, CL-ML	A-1, A-2, A-4, A-6	0	0-10	50-80	25-70	20-70	15-65	23-35	3-12
Me:												
Melvin----------	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	90-100	80-100	80-95	25-35	4-10
	7-39	Silt loam	CL, ML, CL-ML	A-4	0	0	95-100	90-100	80-100	80-95	25-35	4-10
	39-65	Silty clay loam, silt loam, loam	CL, CL-ML	A-6, A-4	0	0	85-100	80-100	70-100	60-98	25-40	5-20
MmD2:												
Mimosa----------	0-11	Silt loam	CL, ML	A-7, A-6, A-4	0	0	80-100	75-100	65-95	60-90	25-45	7-20
	11-51	Clay, silty clay	CH, MH	A-7	0	0	95-100	90-100	85-95	80-95	51-65	25-35
	51-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
MnC2, MnD2, MnE2:												
Minvale---------	0-12	Gravelly loam	CL, CL-ML, ML	A-4	0	0-5	75-95	75-90	65-85	55-75	15-30	NP-10
	12-48	Gravelly clay loam, gravelly silt loam, gravelly silty clay loam, gravelly loam	CL, CL-ML, GC-GM, GC	A-4, A-6	0	0-5	50-75	50-75	40-70	36-65	20-40	5-15
	48-65	Very gravelly clay, gravelly clay, gravelly silty clay loam, gravelly silty clay	GC, ML, SC, CL	A-6, A-7, A-4	0	0-5	55-80	50-75	40-70	36-65	25-50	7-23

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
MoB2, MoC2:												
Monongahela-----	0-5	Silt loam	SM, SC-SM, ML, CL-ML	A-4	0	0-5	90-100	85-100	75-100	45-90	20-35	1-10
	5-24	Silt loam, loam	CL-ML, CL, ML	A-6, A-4	0	0-5	90-100	80-100	75-100	70-90	20-40	5-15
	24-28	Silt loam, clay loam, loam	ML, SC, CL, SM	A-4, A-6	0	0-5	80-100	60-100	55-95	45-95	20-40	3-15
	28-68	Loam, clay loam, gravelly loam	SM, SC, ML, CL	A-6, A-4	0	10-20	75-100	60-90	60-85	40-85	20-40	1-15
	68-80	Gravelly loam, clay loam, loam	SC, ML, CL, SM	A-4, A-6	0	10-20	75-100	60-90	60-85	40-85	20-40	1-15
MtB2, MtC2:												
Mountview-------	0-8	Silt loam	ML, CL-ML	A-4	0	0	100	95-100	95-100	80-96	20-30	2-7
	8-21	Silt loam, silty clay loam	CL	A-7, A-6	0	0	95-100	95-100	90-100	80-96	30-43	10-23
	21-45	Silt loam, silty clay loam	CL	A-7, A-6	0	0	95-100	95-100	90-100	80-96	30-43	10-23
	45-80	Clay, cherty clay, cherty silty clay loam	CH, ML, CL, MH	A-7, A-6	0	0-20	75-100	65-100	60-98	50-96	35-65	11-32
No:												
Nolin-----------	0-14	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	90-100	80-100	25-40	5-18
	14-62	Silt loam, silty clay loam	CL, CL-ML	A-7, A-6, A-4	0	0	100	95-100	85-100	75-100	25-46	5-23
Oc:												
Ocana-----------	0-17	Gravelly silt loam	SM, GM, CL-ML, CL	A-6, A-4	0	0-8	65-80	60-75	50-70	36-65	20-35	3-12
	17-36	Gravelly loam, gravelly silt loam, very gravelly silt loam	CL, GC, GM, GC-GM	A-6, A-4, A-2	0	0-8	60-80	55-75	45-65	30-55	20-40	3-18
	36-48	Gravelly clay loam, gravelly loam, gravelly silt loam, very gravelly silt loam	GM, GC-GM, GC, CL	A-6, A-4, A-2	0	0-8	60-80	55-75	45-65	30-55	20-40	3-18
	48-65	Very gravelly loam, gravelly loam, gravelly silt loam, very gravelly silt loam	GM, SC, CL, GC-GM	A-6, A-4, A-2	0	0-8	60-80	55-75	45-65	30-55	20-40	3-18

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Pq. Pits, quarry												
ReB: Renox-----------	0-10	Silt loam	CL, ML, CL-ML	A-4	0	0-3	90-100	85-95	80-90	70-90	15-30	NP-10
	10-26	Silt loam, gravelly silt loam, gravelly loam	CL, ML, GM, SC	A-6, A-2, A-4	0	0-3	65-95	50-90	40-80	30-70	20-40	2-20
	26-65	Gravelly silty clay loam, gravelly silt loam, gravelly loam	GC, GM, ML, SC	A-2, A-4, A-6	0	0-5	55-90	45-85	35-75	30-65	20-40	2-20
ReC2: Renox-----------	0-5	Silt loam	ML, CL, CL-ML	A-4	0	0-3	90-100	85-95	80-90	70-90	15-30	NP-10
	5-26	Silt loam, gravelly silt loam, gravelly loam	GM, SC, ML, CL	A-6, A-4, A-2	0	0-3	65-95	50-90	40-80	30-70	20-40	2-20
	26-65	Gravelly silty clay loam, gravelly silt loam, gravelly loam	SC, GC, GM, ML	A-6, A-4, A-2	0	0-5	55-90	45-85	35-75	30-65	20-40	2-20
SeC2, SeD2, SeE2: Sengtown--------	0-15	Cobbly loam, gravelly silt loam	CL-ML, ML, GM, CL	A-4	0-5	0-10	60-90	55-80	45-75	45-70	25-35	4-15
	15-20	Gravelly silty clay loam, gravelly silt loam	CL, CL-ML, GC-GM	A-6, A-4	0	0-5	60-90	55-80	45-75	45-70	25-40	5-20
	20-70	Gravelly clay, gravelly silty clay	CL, GC, CH	A-7	0	0-5	50-90	40-75	40-70	40-70	45-70	20-40

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Sm:												
Skidmore--------	0-10	Gravelly loam	CL-ML, ML, SM	A-4	0	0	75-90	70-85	70-85	55-75	20-35	2-10
	10-19	Stratified very gravelly coarse sandy loam, stratified very gravelly clay loam, stratified extremely gravelly clay loam	GC, GP-GM	A-1, A-2	0	5-30	35-60	20-50	15-40	10-35	15-30	NP-15
	19-24	Stratified very gravelly clay loam, stratified very gravelly coarse sandy loam, stratified extremely gravelly clay loam	GC, GP-GM	A-1, A-2	0	5-30	35-60	20-50	15-40	10-35	15-30	NP-15
	24-32	Stratified extremely gravelly clay loam, stratified very gravelly clay loam, stratified very gravelly coarse sandy loam	GC, GP-GM	A-1, A-2	0	5-30	35-60	20-50	15-40	10-35	15-30	NP-15
	32-65	Extremely gravelly coarse sandy loam, stratified very gravelly coarse sandy loam, stratified extremely gravelly clay loam, stratified very gravelly clay loam	GM, GP-GM	A-2, A-1	0	5-30	35-60	20-50	15-40	10-35	10-30	NP-5

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Sn:												
Staser	0-13	Fine sandy loam, loam	ML, CL-ML, CL	A-4, A-6	0	0	90-100	80-100	60-85	55-80	20-35	3-15
	13-88	Loam, fine sandy loam, silt loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0	0-5	45-100	40-100	35-80	30-75	20-35	5-15
SrB2, SrC2, SrD2:												
Sugargrove	0-7	Gravelly silt loam	GM, CL, CL-ML, ML	A-4	0	0-10	65-85	55-80	45-75	40-75	25-35	4-10
	7-24	Gravelly silt loam, gravelly silty clay loam, channery silty clay loam	CL, CL-ML, GC-GM	A-4, A-6	0	0-15	65-85	55-80	45-75	40-70	25-40	6-20
	24-36	Very channery silty clay loam, very gravelly silty clay, very gravelly silty clay loam	GC-GM, CL, CL-ML	A-6	0	0-25	55-85	55-80	45-75	35-70	25-40	6-20
	36-38	Weathered bedrock	---	---	---	---	---	---	---	---	---	---
Su, Sv:												
Sullivan	0-5	Silt loam	CL, CL-ML, ML, SM	A-4	0	0	80-100	75-100	60-100	36-90	20-31	3-10
	5-26	Silt loam	CL-ML, SM, ML, CL	A-4	0	0	80-100	75-100	60-100	36-90	20-31	3-10
	26-62	Loam, silt loam, gravelly loam	GM, SC, SC-SM, SM	A-4, A-2	0	0-5	65-100	55-100	45-85	25-55	20-30	3-10
TbD, TbE:												
Talbott	0-5	Silty clay loam	CL	A-6, A-4	0	0-5	95-100	90-100	85-95	75-95	25-40	8-16
	5-33	Clay, silty clay	CH, CL	A-7	0	0-10	95-100	90-100	85-95	80-95	41-80	20-45
	33-38	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering Index Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
TrB:												
Trace-----------	0-9	Silt loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	75-95	70-90	18-30	NP-10
	9-16	Silt loam	CL, CL-ML	A-6, A-4	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	16-25	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	25-43	Silty clay loam, clay loam, silt loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	43-55	Clay loam, silty clay loam, silt loam	CL	A-4, A-6	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	55-80	Gravelly loam, extremely gravelly loam, extremely gravelly sandy loam	GW-GM, GP-GM, GM	A-1	0	0-10	25-40	10-30	5-25	5-15	0-25	NP-5
TrC2:												
Trace-----------	0-5	Silt loam	ML, CL, CL-ML	A-4	0	0	90-100	85-100	75-95	70-90	18-30	NP-10
	5-16	Silt loam	CL-ML, CL	A-6, A-4	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	16-25	Silt loam	CL-ML, CL	A-6, A-4	0	0	90-100	85-100	75-95	70-95	20-40	5-15
	25-43	Silty clay loam, clay loam, silt loam	CL	A-6, A-4	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	43-55	Clay loam, silty clay loam, silt loam	CL	A-6, A-4	0	0	90-100	80-100	75-95	70-95	30-40	8-18
	55-80	Gravelly loam, extremely gravelly loam, extremely gravelly sandy loam	GM, GW-GM, GP-GM	A-1	0	0-10	25-40	10-30	5-25	5-15	0-25	NP-5
W. Water												
WaB2, WaC2, WaD2:												
Waynesboro------	0-5	Loam	CL, CL-ML, ML, SM	A-4	0	0-5	85-100	80-100	70-95	43-70	18-30	2-9
	5-68	Clay, clay loam	MH, ML, CL	A-7, A-6, A-4	0	0-5	90-100	80-100	70-98	55-75	35-68	9-32

Table 16.—Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
AmB:										
Armour------------	0-14	15-27	1.30-1.45	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.43	.43	5
	14-29	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.37	.37	
	29-70	30-50	1.35-1.55	0.6-2	0.10-0.18	0.0-2.9	0.0-0.5	.37	.32	
AmC2:										
Armour------------	0-5	15-27	1.30-1.45	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.43	.43	5
	5-29	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.37	.37	
	29-70	30-50	1.35-1.55	0.6-2	0.10-0.18	0.0-2.9	0.0-0.5	.37	.32	
Ar:										
Arrington---------	0-37	18-35	1.30-1.45	0.6-2	0.19-0.22	0.0-2.9	2.0-4.0	.37	.37	5
	37-55	18-35	1.30-1.45	0.6-2	0.19-0.22	0.0-2.9	0.5-2.0	.37	.37	
	55-80	20-45	1.30-1.45	0.6-2	0.17-0.22	0.0-2.9	0.5-2.0	.32	.32	
BaF:										
Barfield----------	0-7	28-40	1.30-1.50	0.2-0.6	0.10-0.15	3.0-5.9	2.0-4.0	.24	.24	1
	7-14	35-55	1.30-1.50	0.0015-0.2	0.09-0.14	6.0-8.9	1.0-3.0	.17	.20	
	14-16	---	---	0.0000-0.01	---	---	---	---	---	
Gladdice----------	0-9	22-40	1.20-1.40	0.6-2	0.14-0.18	3.0-5.9	2.0-5.0	.28	.32	2
	9-28	35-55	1.30-1.45	0.0015-0.2	0.12-0.15	6.0-8.9	0.5-1.0	.24	.24	
	28-30	---	---	0.0000-0.01	---	---	---	---	---	
Rock outcrop.										
BeB2, BeC2:										
Bewleyville-------	0-9	15-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5
	9-30	22-35	1.35-1.55	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37	
	30-57	22-35	1.35-1.55	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.37	.37	
	57-77	35-50	1.30-1.50	0.6-2	0.12-0.17	3.0-5.9	0.0-0.5	.37	.32	
ByB:										
Byler-------------	0-9	15-27	1.35-1.50	0.6-2	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	4
	9-20	15-27	1.35-1.50	0.6-2	0.18-0.22	0.0-2.9	0.0-0.5	.32	.37	
	20-58	22-38	1.50-1.70	0.0015-0.2	0.01-0.02	0.0-2.9	0.0-0.5	.32	.37	
	58-82	28-55	1.30-1.50	0.0015-0.2	0.04-0.08	3.0-5.9	0.0-0.5	.24	.28	
	82-95	28-55	1.30-1.50	0.0015-0.2	0.04-0.08	3.0-5.9	0.0-0.5	.24	.28	
CaD2:										
Caneyville--------	0-10	10-27	1.20-1.40	0.6-2	0.15-0.22	0.0-2.9	2.0-4.0	.43	.43	3
	10-19	20-39	1.30-1.45	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.37	.37	
	19-36	36-60	1.35-1.60	0.0015-0.2	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28	
	36-38	---	---	0.0015-0.0029	---	---	---	---	---	
Lonewood----------	0-4	15-25	1.30-1.40	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	4
	4-29	25-45	1.40-1.55	0.6-2	0.14-0.17	0.0-2.9	0.0-0.5	.32	.32	
	29-45	25-45	1.40-1.55	0.6-2	0.14-0.17	0.0-2.9	0.0-0.5	.32	.32	
	45-61	15-45	1.40-1.55	0.6-2	0.05-0.11	0.0-2.9	0.0-0.5	.32	.32	
CrC2, CrD2, CrE2:										
Christian---------	0-8	12-27	1.20-1.40	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	4
	8-18	27-40	1.20-1.50	0.6-2	0.14-0.19	3.0-5.9	0.2-0.8	.28	.32	
	18-48	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	48-57	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	57-59	---	---	0.0000-0.2	---	---	---	---	---	

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
CwD:										
Christian---------	0-8	12-27	1.20-1.40	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	4
	8-18	27-40	1.20-1.50	0.6-2	0.14-0.19	3.0-5.9	0.2-0.8	.28	.32	
	18-48	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	48-57	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	57-59	---	---	0.0000-0.2	---	---	---	---	---	
Faywood-----------	0-8	15-27	1.30-1.40	0.6-2	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3
	8-25	35-60	1.35-1.45	0.0015-0.2	0.12-0.17	3.0-5.9	0.0-0.8	.28	.28	
	25-27	---	---	0.0015-0.0029	---	---	---	---	---	
CwE:										
Christian---------	0-8	12-27	1.20-1.40	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.37	.37	4
	8-18	27-40	1.20-1.50	0.6-2	0.14-0.19	3.0-5.9	0.2-0.8	.28	.32	
	18-48	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	48-57	30-60	1.30-1.60	0.06-0.2	0.10-0.16	3.0-5.9	0.0-0.8	.28	.28	
	57-59	---	---	0.0000-0.2	---	---	---	---	---	
Faywood-----------	0-8	15-27	1.30-1.40	0.6-2	0.18-0.22	0.0-2.9	1.0-4.0	.37	.37	3
	8-25	35-60	1.35-1.45	0.0015-0.2	0.12-0.17	3.0-5.9	0.0-0.8	.28	.28	
	25-27	---	---	0.0015-0.0029	---	---	---	---	---	
DeD2:										
Dellrose----------	0-5	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	5
	5-22	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	
	22-66	20-35	1.20-1.40	2-6	0.09-0.16	0.0-2.9	0.0-0.5	.24	.28	
	66-80	30-60	1.35-1.55	0.0015-0.2	0.10-0.16	3.0-5.9	0.0-0.5	.24	.24	
DeE:										
Dellrose----------	0-7	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	5
	7-22	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	
	22-66	20-35	1.20-1.40	2-6	0.09-0.16	0.0-2.9	0.0-0.5	.24	.28	
	66-80	30-60	1.35-1.55	0.0015-0.2	0.10-0.16	3.0-5.9	0.0-0.5	.24	.24	
DeF:										
Dellrose----------	0-7	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	5
	7-22	15-27	1.20-1.40	2-6	0.10-0.17	0.0-2.9	1.0-3.0	.24	.32	
	22-66	20-35	1.20-1.40	2-6	0.09-0.16	0.0-2.9	0.0-0.5	.24	.28	
	66-80	30-60	1.35-1.55	0.0015-0.2	0.10-0.16	3.0-5.9	0.0-0.5	.24	.24	
Mimosa------------	0-11	24-40	1.30-1.50	0.6-2	0.12-0.20	0.0-2.9	1.0-3.0	.37	.37	3
	11-51	45-60	1.35-1.55	0.0015-0.2	0.10-0.16	6.0-8.9	0.0-0.5	.24	.24	
	51-53	---	---	0.0000-0.06	---	---	---	---	---	
DfC2:										
Dewey-------------	0-7	17-27	1.35-1.50	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5
	7-14	35-50	1.45-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.24	.24	
	14-70	45-60	1.45-1.55	0.2-0.6	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24	
DkB2:										
Dickson-----------	0-9	15-26	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	4
	9-20	18-30	1.35-1.55	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43	
	20-38	18-30	1.35-1.55	0.0015-0.2	0.01-0.02	0.0-2.9	0.0-0.5	.43	.43	
	38-79	35-50	1.35-1.55	0.2-0.6	0.01-0.02	3.0-5.9	0.0-0.5	.28	.32	
EwB:										
Etowah------------	0-8	15-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5
	8-72	23-35	1.35-1.50	0.6-2	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32	
EwC2:										
Etowah------------	0-5	15-27	1.30-1.45	0.6-2	0.15-0.20	0.0-2.9	1.0-3.0	.37	.37	5
	5-72	23-35	1.35-1.50	0.6-2	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32	

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
FeC2, FeD2, FeE2:										
Frederick	0-6	13-27	1.25-1.50	2-6	0.12-0.20	0.0-2.9	1.0-2.0	.28	.32	5
	6-10	13-27	1.25-1.50	2-6	0.12-0.20	0.0-2.9	0.2-0.8	.28	.32	
	10-16	35-65	1.20-1.50	0.2-0.6	0.10-0.18	3.0-5.9	0.0-0.8	.24	.28	
	16-31	40-65	1.20-1.50	0.2-0.6	0.10-0.18	3.0-5.9	0.0-0.8	.24	.24	
	31-66	40-65	1.20-1.50	0.2-0.6	0.10-0.18	3.0-5.9	0.0-0.8	.24	.24	
	66-84	40-65	1.20-1.50	0.2-0.6	0.09-0.20	3.0-5.9	0.0-0.8	.24	.24	
GnD:										
Garmon	0-3	7-27	1.20-1.40	2-6	0.05-0.16	0.0-2.9	0.5-3.0	.28	.32	3
	3-6	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.2-1.0	.28	.32	
	6-20	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.0-0.8	.20	.32	
	20-29	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.0-0.8	.20	.32	
	29-60	---	---	0.06-0.6	---	---	---	---	---	
Newbern	0-1	10-27	1.20-1.50	0.6-2	0.07-0.20	0.0-2.9	1.0-2.0	.28	.28	2
	1-10	10-27	1.30-1.60	0.6-2	0.07-0.20	0.0-2.9	0.0-0.5	.28	.32	
	10-14	10-27	1.30-1.60	0.6-2	0.07-0.20	0.0-2.9	0.0-0.5	.28	.32	
	14-18	---	---	0.06-0.6	---	---	---	---	---	
	18-60	---	---	0.0015-0.06	---	---	---	---	---	
GnF:										
Garmon	0-3	7-27	1.20-1.40	2-6	0.05-0.16	0.0-2.9	0.5-3.0	.28	.32	3
	3-6	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.2-1.0	.28	.32	
	6-20	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.0-0.8	.20	.32	
	20-29	18-34	1.20-1.50	2-6	0.05-0.16	0.0-2.9	0.0-0.8	.20	.32	
	29-60	---	---	0.06-0.6	---	---	---	---	---	
Newbern	0-1	10-27	1.20-1.50	0.6-2	0.07-0.20	0.0-2.9	1.0-2.0	.28	.28	1
	1-10	10-27	1.30-1.60	0.6-2	0.07-0.20	0.0-2.9	0.0-0.5	.28	.32	
	10-14	10-27	1.30-1.60	0.6-2	0.07-0.20	0.0-2.9	0.0-0.5	.28	.32	
	14-18	---	---	0.06-0.6	---	---	---	---	---	
	18-60	---	---	0.0015-0.06	---	---	---	---	---	
Ha:										
Hamblen	0-6	15-25	1.30-1.45	0.6-2	0.18-0.20	0.0-2.9	1.0-3.0	.32	.32	5
	6-65	18-32	1.30-1.45	0.6-2	0.17-0.20	0.0-2.9	0.0-0.8	.32	.32	
HhC, HhD, HhF:										
Hawthorne	0-1	12-25	1.40-1.50	2-6	0.14-0.18	0.0-2.9	1.0-3.0	.20	.37	3
	1-4	15-32	1.40-1.50	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32	
	4-14	15-32	1.40-1.50	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32	
	14-23	15-32	1.40-1.50	2-6	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32	
	23-26	---	---	0.0015-0.2	---	---	---	---	---	
HoB, HoC2:										
Holston	0-20	10-25	1.35-1.50	0.6-2	0.15-0.20	0.0-2.9	0.5-2.0	.28	.28	5
	20-65	18-35	1.40-1.55	0.6-2	0.13-0.20	0.0-2.9	0.0-0.5	.32	.32	
HuB, HuC:										
Humphreys	0-5	12-25	1.35-1.50	2-6	0.10-0.15	0.0-2.9	2.0-4.0	.28	.32	5
	5-17	18-32	1.35-1.55	2-6	0.09-0.14	0.0-2.9	0.2-0.8	.24	.28	
	17-35	18-32	1.40-1.60	2-6	0.06-0.12	0.0-2.9	0.0-0.5	.24	.28	
	35-55	18-32	1.35-1.55	2-6	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28	
	55-80	18-32	1.35-1.55	2-6	0.09-0.14	0.0-2.9	0.0-0.5	.24	.28	
Hw:										
Huntington	0-10	18-30	1.10-1.30	0.6-2	0.18-0.24	0.0-2.9	2.0-4.0	.28	.28	5
	10-19	18-30	1.30-1.50	0.6-2	0.16-0.22	0.0-2.9	1.0-2.0	.32	.32	
	19-72	15-30	1.30-1.50	0.6-2	0.10-0.16	0.0-2.9	0.2-0.8	.28	.43	

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
Le:										
Lee	0-8	18-27	1.35-1.50	0.6-2	0.12-0.18	0.0-2.9	1.0-3.0	.28	.32	5
	8-38	18-27	1.35-1.50	0.6-2	0.09-0.14	0.0-2.9	0.0-0.8	.28	.32	
	38-62	18-27	1.35-1.50	0.6-2	0.09-0.14	0.0-2.9	0.0-0.8	.28	.32	
Ln:										
Lindside	0-7	15-27	1.20-1.40	0.6-2	0.20-0.26	0.0-2.9	1.0-3.0	.32	.32	5
	7-40	18-35	1.20-1.40	0.2-2	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37	
	40-65	18-35	1.20-1.40	0.2-2	0.17-0.22	0.0-2.9	0.0-0.5	.37	.37	
Lo:										
Lobelville	0-3	12-25	1.30-1.45	0.6-2	0.10-0.15	0.0-2.9	1.0-3.0	.28	.32	4
	3-23	18-35	1.35-1.50	0.6-2	0.08-0.13	0.0-2.9	0.0-0.8	.28	.32	
	23-61	18-35	1.35-1.50	0.6-2	0.06-0.14	0.0-2.9	0.0-0.8	.28	.32	
Me:										
Melvin	0-7	12-17	1.20-1.60	0.6-2	0.18-0.23	0.0-2.9	0.5-3.0	.43	.43	5
	7-39	12-17	1.20-1.60	0.6-2	0.18-0.23	0.0-2.9	0.5-1.0	.43	.43	
	39-65	7-40	1.40-1.70	0.6-2	0.16-0.23	0.0-2.9	0.2-0.8	.43	.43	
MmD2:										
Mimosa	0-11	24-40	1.30-1.50	0.6-2	0.12-0.20	0.0-2.9	1.0-3.0	.37	.37	3
	11-51	45-60	1.35-1.55	0.0015-0.2	0.10-0.16	6.0-8.9	0.0-0.5	.24	.24	
	51-60	---	---	0.0000-0.06	---	---	---	---	---	
MnC2, MnD2, MnE2:										
Minvale	0-12	15-30	1.30-1.45	0.6-2	0.16-0.22	0.0-2.9	0.5-2.0	.28	.37	5
	12-48	20-35	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.0-0.5	.28	.32	
	48-65	25-45	1.40-1.55	0.6-2	0.11-0.17	0.0-2.9	0.0-0.5	.28	.32	
MoB2:										
Monongahela	0-5	10-27	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	2.0-4.0	.43	.43	4
	5-24	18-35	1.30-1.50	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43	
	24-28	18-35	1.30-1.60	0.0015-0.2	0.08-0.12	0.0-2.9	0.0-0.5	.43	.49	
	28-68	10-35	1.20-1.40	0.0015-0.2	0.01-0.01	0.0-2.9	0.0-0.5	.37	.43	
	68-80	10-35	1.20-1.40	0.06-0.2	0.01-0.02	0.0-2.9	0.0-0.5	.37	.43	
MoC2:										
Monongahela	0-5	10-27	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	2.0-4.0	.43	.43	4
	5-24	18-35	1.30-1.50	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43	
	24-28	18-35	1.30-1.60	0.0015-0.2	0.08-0.12	0.0-2.9	0.0-0.5	.43	.49	
	28-68	10-35	1.20-1.40	0.0015-0.2	0.01-0.01	0.0-2.9	0.0-0.5	.37	.43	
	68-80	10-35	1.20-1.40	0.06-0.2	0.01-0.02	0.0-2.9	0.0-0.5	.37	.43	
MtB2, MtC2:										
Mountview	0-8	15-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-3.0	.43	.43	5
	8-21	20-35	1.40-1.60	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.43	.43	
	21-45	20-35	1.40-1.60	0.2-0.6	0.17-0.20	0.0-2.9	0.0-0.5	.43	.43	
	45-80	35-55	1.30-1.50	0.2-0.6	0.10-0.15	3.0-5.9	0.0-0.5	.32	.37	
No:										
Nolin	0-14	12-35	1.20-1.40	0.6-2	0.18-0.23	0.0-2.9	2.0-4.0	.43	.43	5
	14-62	18-35	1.25-1.50	0.6-2	0.18-0.23	0.0-2.9	0.3-2.0	.43	.43	
Oc:										
Ocana	0-17	18-27	1.35-1.50	2-6	0.12-0.18	0.0-2.9	1.0-3.0	.28	.32	5
	17-36	20-32	1.35-1.50	2-6	0.10-0.17	0.0-2.9	0.5-1.0	.28	.32	
	36-48	20-32	1.35-1.50	2-6	0.10-0.17	0.0-2.9	0.5-1.0	.28	.32	
	48-65	20-32	1.35-1.50	2-6	0.10-0.17	0.0-2.9	0.5-1.0	.28	.32	

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
Pq. Pits, quarry										
ReB:										
Renox	0-10	12-27	1.20-1.40	0.6-2	0.18-0.22	0.0-2.9	1.0-4.0	.32	.32	4
	10-26	18-35	1.20-1.45	0.6-2	0.18-0.22	0.0-2.9	0.5-2.0	.17	.32	
	26-65	18-35	1.25-1.45	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	.17	.32	
ReC2:										
Renox	0-5	12-27	1.20-1.40	0.6-2	0.18-0.22	0.0-2.9	1.0-4.0	.32	.32	5
	5-26	18-35	1.20-1.45	0.6-2	0.18-0.22	0.0-2.9	0.5-2.0	.17	.32	
	26-65	18-35	1.25-1.45	0.6-2	0.10-0.16	0.0-2.9	0.0-0.5	.17	.32	
SeC2, SeD2, SeE2:										
Sengtown	0-15	12-27	1.35-1.55	0.6-2	0.10-0.16	0.0-2.9	1.0-2.0	.28	.37	5
	15-20	23-40	1.35-1.55	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.24	.32	
	20-70	40-60	1.35-1.60	0.2-0.6	0.08-0.12	3.0-5.9	0.0-0.5	.24	.28	
Sm:										
Skidmore	0-10	17-27	1.20-1.40	2-6	0.13-0.18	0.0-2.9	1.0-3.0	.32	.32	3
	10-19	7-32	1.30-1.60	2-6	0.04-0.10	0.0-2.9	0.5-1.0	.17	.24	
	19-24	7-32	1.30-1.60	2-6	0.04-0.10	0.0-2.9	0.0-0.8	.17	.24	
	24-32	7-32	1.30-1.60	2-6	0.04-0.10	0.0-2.9	0.0-0.8	.17	.24	
	32-65	7-32	1.30-1.60	2-6	0.04-0.10	0.0-2.9	0.0-0.8	.17	.24	
Sn:										
Staser	0-13	12-27	1.40-1.60	0.6-2	0.15-0.22	0.0-2.9	2.0-4.0	.32	.32	5
	13-88	18-27	1.40-1.60	0.6-6	0.07-0.18	0.0-2.9	0.5-2.0	.28	.32	
SrB2, SrC2, SrD2:										
Sugargrove	0-7	10-27	1.20-1.40	0.6-6	0.14-0.19	0.0-2.9	1.0-3.0	.28	.37	4
	7-24	18-35	1.30-1.50	0.6-6	0.14-0.19	0.0-2.9	0.0-0.5	.28	.32	
	24-36	25-45	1.30-1.50	0.6-6	0.10-0.19	0.0-2.9	0.0-0.5	.28	.32	
	36-38	---	---	0.0000-0.2	---	---	---	---	---	
Su, Sv:										
Sullivan	0-5	18-25	1.30-1.45	0.6-2	0.12-0.20	0.0-2.9	1.0-3.0	.32	.32	5
	5-26	18-25	1.30-1.45	0.6-2	0.12-0.20	0.0-2.9	0.5-1.0	.32	.32	
	26-62	15-25	1.30-1.45	0.6-2	0.09-0.14	0.0-2.9	0.0-0.5	.32	.32	
TbD:										
Talbott	0-5	15-40	1.35-1.50	0.6-2	0.16-0.20	0.0-2.9	0.5-2.0	.37	.37	2
	5-33	40-60	1.30-1.50	0.0015-0.2	0.10-0.14	3.0-5.9	0.0-0.5	.24	.24	
	33-38	---	---	0.0000-0.06	---	---	---	---	---	
Rock outcrop.										
TbE:										
Talbott	0-5	15-40	1.35-1.50	0.6-2	0.16-0.20	0.0-2.9	0.5-2.0	.37	.37	3
	5-33	40-60	1.30-1.50	0.0015-0.2	0.10-0.14	3.0-5.9	0.0-0.5	.24	.24	
	33-38	---	---	0.0000-0.06	---	---	---	---	---	
Rock outcrop.										
TrB:										
Trace	0-9	12-22	1.30-1.45	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.37	.43	4
	9-16	18-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	0.0-0.5	.37	.43	
	16-25	18-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	0.0-0.5	.37	.43	
	25-43	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.32	.32	
	43-55	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.24	.24	
	55-80	5-18	1.40-1.60	6-20	0.01-0.07	0.0-2.9	0.0-0.5	.24	.32	

Table 16.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	g/cc	In/hr	In/in	Pct	Pct			
TrC2:										
Trace-------------	0-5	12-22	1.30-1.45	0.6-2	0.18-0.23	0.0-2.9	1.0-3.0	.37	.43	4
	5-16	18-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	0.0-0.5	.37	.43	
	16-25	18-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	0.0-0.5	.37	.43	
	25-43	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.32	.32	
	43-55	22-35	1.30-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-0.5	.24	.24	
	55-80	5-18	1.40-1.60	6-20	0.01-0.07	0.0-2.9	0.0-0.5	.24	.32	
W.										
Water										
WaB2, WaC2, WaD2:										
Waynesboro--------	0-5	10-30	1.40-1.55	0.6-2	0.15-0.21	0.0-2.9	0.5-2.0	.28	.28	5
	5-68	35-50	1.40-1.55	0.6-2	0.13-0.18	0.0-2.9	0.0-1.0	.28	.28	

Table 17.—Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
AmB:				
Armour	0-14	5.0-15	---	5.1-6.0
	14-29	5.0-15	---	5.1-6.0
	29-70	5.0-15	---	5.1-6.0
AmC2:				
Armour	0-5	5.0-15	---	5.1-6.0
	5-29	5.0-15	---	5.1-6.0
	29-70	5.0-15	---	5.1-6.0
Ar:				
Arrington	0-37	5.0-15	---	6.1-7.8
	37-55	5.0-15	---	6.1-7.8
	55-80	5.0-15	---	6.1-7.8
BaF:				
Barfield	0-7	20-50	---	6.1-7.8
	7-14	20-40	---	6.1-7.8
	14-16	---	---	---
Gladdice	0-9	20-50	---	5.6-7.8
	9-28	20-40	---	5.6-7.8
	28-30	---	---	---
Rock outcrop.				
BeB2, BeC2:				
Bewleyville	0-9	5.0-15	---	4.5-6.5
	9-30	5.0-15	---	4.5-6.0
	30-57	2.0-10	---	4.5-6.0
	57-77	2.0-10	---	4.5-5.5
ByB:				
Byler	0-9	10-15	---	5.1-6.0
	9-20	5.0-15	---	5.1-6.0
	20-58	5.0-10	---	5.1-6.0
	58-82	5.0-10	---	5.1-6.0
	82-95	5.0-10	---	5.1-6.0
CaD2:				
Caneyville	0-10	5.0-20	---	4.5-7.3
	10-19	5.0-20	---	4.5-5.5
	19-36	10-30	---	4.5-7.3
	36-38	---	---	---
Lonewood	0-4	---	2.0-10	4.5-5.5
	4-29	---	2.0-5.0	4.5-5.5
	29-45	---	2.0-5.0	4.5-5.5
	45-61	---	2.0-5.0	4.5-5.5
CrC2, CrD2, CrE2:				
Christian	0-8	5.0-15	---	4.5-6.5
	8-18	5.0-10	---	4.5-5.5
	18-48	5.0-10	---	4.5-5.5
	48-57	5.0-10	---	4.5-5.5
	57-59	---	---	---

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
CwD:				
Christian	0-8	5.0-15	---	4.5-6.5
	8-18	5.0-10	---	4.5-5.5
	18-48	5.0-10	---	4.5-5.5
	48-57	5.0-10	---	4.5-5.5
	57-59	---	---	---
Faywood	0-8	10-30	---	5.1-7.8
	8-25	10-30	---	5.1-7.8
	25-27	---	---	---
CwE:				
Christian	0-8	5.0-15	---	4.5-6.5
	8-18	5.0-10	---	4.5-5.5
	18-48	5.0-10	---	4.5-5.5
	48-57	5.0-10	---	4.5-5.5
	57-59	---	---	---
Faywood	0-8	20-30	---	5.1-7.8
	8-25	20-30	---	5.1-7.8
	25-27	---	---	---
DeD2:				
Dellrose	0-5	5.0-15	---	4.5-6.0
	5-22	5.0-15	---	4.5-6.0
	22-66	5.0-15	---	4.5-6.0
	66-80	5.0-15	---	4.5-6.0
DeE:				
Dellrose	0-7	5.0-15	---	4.5-6.0
	7-22	5.0-15	---	4.5-6.0
	22-66	5.0-15	---	4.5-6.0
	66-80	5.0-15	---	4.5-6.0
DeF:				
Dellrose	0-7	5.0-15	---	4.5-6.0
	7-22	5.0-15	---	4.5-6.0
	22-66	5.0-15	---	4.5-6.0
	66-80	5.0-15	---	4.5-6.0
Mimosa	0-11	10-15	5.0-10	4.5-6.0
	11-51	10-30	5.0-15	4.5-6.0
	51-53	---	---	---
DfC2:				
Dewey	0-7	---	5.0-10	4.5-5.5
	7-14	---	2.0-10	4.5-5.5
	14-70	---	2.0-10	4.5-5.5
DkB2:				
Dickson	0-9	---	2.0-10	4.5-5.5
	9-20	---	2.0-10	4.5-5.5
	20-38	---	2.0-10	4.5-5.5
	38-79	---	5.0-15	4.5-5.5
EwB:				
Etowah	0-8	---	2.0-10	4.5-5.5
	8-72	---	2.0-5.0	4.5-5.5
EwC2:				
Etowah	0-5	---	2.0-10	4.5-5.5
	5-72	---	2.0-5.0	4.5-5.5

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
FeC2, FeD2, FeE2:				
Frederick	0-6	5.0-15	---	4.5-6.0
	6-10	5.0-15	---	4.5-6.0
	10-16	5.0-15	---	4.5-6.0
	16-31	5.0-15	---	4.5-6.0
	31-66	5.0-15	---	4.5-6.0
	66-84	5.0-15	---	4.5-6.0
GnD, GnF:				
Garmon	0-3	5.0-15	---	4.5-7.3
	3-6	5.0-10	---	4.5-7.3
	6-20	2.0-10	---	5.6-7.3
	20-29	2.0-10	---	5.6-7.3
	29-60	---	---	---
Newbern	0-1	10-15	---	5.6-7.3
	1-10	5.0-15	---	5.6-7.3
	10-14	5.0-15	---	5.6-7.3
	14-18	---	---	---
	18-60	---	---	---
Ha:				
Hamblen	0-6	10-20	---	5.1-7.3
	6-65	5.0-15	---	5.1-7.3
HhC, HhD, HhF:				
Hawthorne	0-1	---	2.0-10	3.6-5.5
	1-4	---	2.0-10	3.6-5.5
	4-14	---	2.0-5.0	3.6-5.5
	14-23	---	2.0-5.0	3.6-5.5
	23-26	---	---	---
HoB, HoC2:				
Holston	0-20	---	5.0-15	4.5-5.5
	20-65	---	2.0-10	4.5-5.5
HuB, HuC:				
Humphreys	0-5	5.0-15	---	4.5-6.0
	5-17	5.0-10	---	4.5-6.0
	17-35	2.0-10	---	4.5-6.0
	35-55	2.0-10	---	4.5-6.0
	55-80	2.0-15	---	4.5-6.0
Hw:				
Huntington	0-10	5.0-20	---	5.6-7.8
	10-19	5.0-20	---	5.6-7.8
	19-72	5.0-20	---	5.6-7.8
Le:				
Lee	0-8	5.0-15	5.0-10	4.5-6.5
	8-38	5.0-15	5.0-10	4.5-5.5
	38-62	5.0-10	5.0-10	4.5-5.5
Ln:				
Lindside	0-7	10-15	---	5.1-7.8
	7-40	10-20	---	5.1-7.8
	40-65	10-20	---	5.1-7.8
Lo:				
Lobelville	0-3	5.0-15	---	4.5-6.0
	3-23	5.0-15	---	4.5-6.0
	23-61	5.0-10	---	4.5-6.0

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
Me:				
Melvin	0-7	5.0-10	---	5.6-7.8
	7-39	5.0-10	---	5.6-7.8
	39-65	5.0-15	---	5.6-7.8
MmD2:				
Mimosa	0-11	10-15	5.0-10	4.5-6.0
	11-51	10-30	5.0-15	4.5-6.0
	51-60	---	---	---
MnC2, MnD2, MnE2:				
Minvale	0-12	---	2.0-10	4.5-5.5
	12-48	---	2.0-5.0	4.5-5.5
	48-65	---	2.0-5.0	4.5-5.5
MoB2, MoC2:				
Monongahela	0-5	---	5.0-20	4.5-5.5
	5-24	---	5.0-15	4.5-5.5
	24-28	---	2.0-10	4.5-5.5
	28-68	---	2.0-10	4.5-5.5
	68-80	---	2.0-10	4.5-5.5
MtB2, MtC2:				
Mountview	0-8	---	2.0-10	4.5-5.5
	8-21	---	2.0-10	4.5-5.5
	21-45	---	2.0-10	4.5-5.5
	45-80	---	2.0-10	4.5-5.5
No:				
Nolin	0-14	6.0-20	---	5.6-8.4
	14-62	6.0-20	---	5.6-8.4
Oc:				
Ocana	0-17	5.0-20	---	5.6-7.3
	17-36	5.0-15	---	5.6-7.3
	36-48	5.0-15	---	5.6-7.3
	48-65	5.0-15	---	5.6-7.3
Pq.				
Pits, quarry				
ReB:				
Renox	0-10	5.0-18	---	5.1-7.8
	10-26	5.0-20	---	5.1-7.8
	26-65	5.0-20	---	5.1-7.8
ReC2:				
Renox	0-5	5.0-18	---	5.1-7.8
	5-26	5.0-20	---	5.1-7.8
	26-65	5.0-20	---	5.1-7.8
SeC2, SeD2, SeE2:				
Sengtown	0-15	---	5.0-10	4.5-6.0
	15-20	---	5.0-15	4.5-6.0
	20-70	---	5.0-15	4.5-6.0
Sm:				
Skidmore	0-10	5.0-20	---	5.6-7.8
	10-19	5.0-15	---	5.6-7.8
	19-24	5.0-10	---	5.6-7.8
	24-32	5.0-10	---	5.6-7.8
	32-65	5.0-10	---	5.6-7.8

Table 17.—Chemical Properties of the Soils—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	In	meq/100 g	meq/100 g	pH
Sn:				
Staser	0-13	5.0-20	---	5.6-7.3
	13-88	5.0-15	---	5.6-7.3
SrB2, SrC2, SrD2:				
Sugargrove	0-7	5.0-15	2.0-10	4.5-5.5
	7-24	5.0-15	2.0-10	4.5-5.5
	24-36	5.0-15	2.0-10	4.5-5.5
	36-38	---	---	---
Su, Sv:				
Sullivan	0-5	10-20	---	5.1-7.3
	5-26	5.0-15	---	5.1-7.3
	26-62	5.0-15	---	5.1-7.3
TbD, TbE:				
Talbott	0-5	10-20	---	5.1-6.5
	5-33	10-30	---	5.1-6.5
	33-38	---	---	---
Rock outcrop.				
TrB:				
Trace	0-9	5.0-10	---	5.1-6.0
	9-16	5.0-10	---	5.1-6.0
	16-25	5.0-10	---	5.1-6.0
	25-43	5.0-10	---	5.1-6.0
	43-55	5.0-10	---	5.1-6.0
	55-80	5.0-10	---	5.1-6.0
TrC2:				
Trace	0-5	5.0-10	---	5.1-6.0
	5-16	5.0-10	---	5.1-6.0
	16-25	5.0-10	---	5.1-6.0
	25-43	5.0-10	---	5.1-6.0
	43-55	5.0-10	---	5.1-6.0
	55-80	5.0-10	---	5.1-6.0
W.				
Water				
WaB2, WaC2, WaD2:				
Waynesboro	0-5	---	5.0-10	4.5-5.5
	5-68	---	3.0-10	4.5-5.5

Table 18.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
AmB, AmC2:									
Armour	B								
		Jan-Dec	---	---	---	---	None	---	None
Ar:									
Arrington	B								
		January	---	---	---	---	None	Very brief	Occasional
		February	---	---	---	---	None	Very brief	Occasional
		March	---	---	---	---	None	Very brief	Occasional
		December	---	---	---	---	None	Very brief	Occasional
BaF:									
Barfield	D								
		Jan-Dec	---	---	---	---	None	---	None
Gladdice	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
BeB2:									
Bewleyville	B								
		Jan-Dec	---	---	---	---	None	---	None
BeC2:									
Bewleyville	B								
		Jan-Dec	---	---	---	---	None	---	None
ByB:									
Byler	C								
		January	1.5-2.0	---	---	---	None	---	None
		February	1.5-2.0	---	---	---	None	---	None
		March	1.5-2.0	---	---	---	None	---	None
		April	1.5-2.0	---	---	---	None	---	None
		December	1.5-2.0	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
CaD2:									
Caneyville	C								
		Jan-Dec	---	---	---	---	None	---	None
Lonewood	B								
		Jan-Dec	---	---	---	---	None	---	None
CrC2, CrD2, CrE2:									
Christian	C								
		Jan-Dec	---	---	---	---	None	---	None
CwD, CwE:									
Christian	C								
		Jan-Dec	---	---	---	---	None	---	None
Faywood	C								
		Jan-Dec	---	---	---	---	None	---	None
DeD2, DeE:									
Dellrose	B								
		Jan-Dec	---	---	---	---	None	---	None
DeF:									
Dellrose	B								
		Jan-Dec	---	---	---	---	None	---	None
Mimosa	C								
		Jan-Dec	---	---	---	---	None	---	None
DfC2:									
Dewey	B								
		Jan-Dec	---	---	---	---	None	---	None
DkB2:									
Dickson	C								
		January	1.5-2.5	---	---	---	None	---	None
		February	1.5-2.5	---	---	---	None	---	None
		March	1.5-2.5	---	---	---	None	---	None
		April	1.5-2.5	---	---	---	None	---	None
		December	1.5-2.5	---	---	---	None	---	None
EwB, EwC2:									
Etowah	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
FeC2, FeD2, FeE2:									
Frederick	B								
		Jan-Dec	---	---	---	---	None	---	None
GnD, GnF:									
Garmon	C								
		Jan-Dec	---	---	---	---	None	---	None
Newbern	C								
		Jan-Dec	---	---	---	---	None	---	None
Ha:									
Hamblen	C								
		January	2.0-3.0	>6.0	0.5-2.0	Brief	Occasional	---	None
		February	2.0-3.0	>6.0	0.5-2.0	Brief	Occasional	---	None
		March	2.0-3.0	>6.0	0.5-2.0	Brief	Occasional	---	None
		December	2.0-3.0	>6.0	0.5-2.0	Brief	Occasional	---	None
HhC, HhD, HhF:									
Hawthorne	B								
		Jan-Dec	---	---	---	---	None	---	None
HoB, HoC2:									
Holston	B								
		Jan-Dec	---	---	---	---	None	---	None
HuB, HuC:									
Humphreys	B								
		January	5.0-6.0	>6.0	---	---	None	---	None
		February	5.0-6.0	>6.0	---	---	None	---	None
		March	5.0-6.0	>6.0	---	---	None	---	None
		December	5.0-6.0	>6.0	---	---	None	---	None
Hw:									
Huntington	B								
		January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		April	---	---	---	---	None	Very brief	Rare
		May	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare

Table 18.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Le:									
Lee	D								
		January	0.0	>6.0	---	---	None	Brief	Occasional
		February	0.0	>6.0	---	---	None	Brief	Occasional
		March	0.0	>6.0	---	---	None	Brief	Occasional
		April	0.0	>6.0	---	---	None	Brief	Occasional
		December	0.0	>6.0	---	---	None	Brief	Occasional
Ln:									
Lindside	C								
		January	1.2-2.0	>6.0	---	---	None	Brief	Occasional
		February	1.2-2.0	>6.0	---	---	None	Brief	Occasional
		March	1.2-2.0	>6.0	---	---	None	Brief	Occasional
		April	1.2-2.0	>6.0	---	---	None	Brief	Occasional
		December	1.2-2.0	>6.0	---	---	None	Brief	Occasional
Lo:									
Lobelville	C								
		January	2.0-3.0	5.1-5.1	---	---	None	Very brief	Occasional
		February	2.0-3.0	5.1-5.1	---	---	None	Very brief	Occasional
		March	2.0-3.0	5.1-5.1	---	---	None	Very brief	Occasional
		April	2.0-3.0	5.1-5.1	---	---	None	Very brief	Occasional
		December	2.0-3.0	5.1-5.1	---	---	None	Very brief	Occasional
Me:									
Melvin	D								
		January	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		February	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		March	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		April	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		May	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
		December	0.0	>6.0	0.5-2.0	Long	Frequent	---	None
MmD2:									
Mimosa	C								
		Jan-Dec	---	---	---	---	None	---	None
MnC2, MnD2, MnE2:									
Minvale	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
MoB2, MoC2:									
Monongahela	C								
		January	1.5-2.5	---	---	---	None	---	None
		February	1.5-2.5	---	---	---	None	---	None
		March	1.5-2.5	---	---	---	None	---	None
		April	1.5-2.5	---	---	---	None	---	None
		December	1.5-2.5	---	---	---	None	---	None
MtB2, MtC2:									
Mountview	B								
		Jan-Dec	---	---	---	---	None	---	None
No:									
Nolin	B								
		January	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		February	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		March	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	---	---	---	---	None	Brief	Occasional
		December	4.0-6.0	>6.0	---	---	None	Brief	Occasional
Oc:									
Ocana	B								
		January	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
		February	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
		March	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
		December	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
Pq.									
Pits, quarry									
ReB, ReC2:									
Renox	B								
		Jan-Dec	---	---	---	---	None	---	None
SeC2, SeD2, SeE2:									
Sengtown	B								
		Jan-Dec	---	---	---	---	None	---	None
Sm:									
Skidmore	B								
		January	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		February	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		March	3.0-4.0	>6.0	---	---	None	Very brief	Occasional
		April	---	---	---	---	None	Very brief	Occasional
		May	---	---	---	---	None	Very brief	Occasional
		December	3.0-4.0	>6.0	---	---	None	Very brief	Occasional

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Sn:									
Staser	B								
		January	---	---	---	---	None	Very brief	Rare
		February	---	---	---	---	None	Very brief	Rare
		March	---	---	---	---	None	Very brief	Rare
		December	---	---	---	---	None	Very brief	Rare
SrB2, SrC2, SrD2:									
Sugargrove	B								
		Jan-Dec	---	---	---	---	None	---	None
Su:									
Sullivan	B								
		January	4.0-6.0	>6.0	0.5-2.0	Very brief	Occasional	---	None
		February	4.0-6.0	>6.0	0.5-2.0	Very brief	Occasional	---	None
		March	4.0-6.0	>6.0	0.5-2.0	Very brief	Occasional	---	None
		December	4.0-6.0	>6.0	0.5-2.0	Very brief	Occasional	---	None
Sv:									
Sullivan	B								
		January	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		February	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		March	4.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	4.0-6.0	>6.0	---	---	None	Brief	Occasional
TbD, TbE:									
Talbott	C								
		Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.									
TrB, TrC2:									
Trace	B								
		Jan-Dec	---	---	---	---	None	---	None
W.									
Water									
WaB2, WaC2, WaD2:									
Waynesboro	B								
		Jan-Dec	---	---	---	---	None	---	None

Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer				Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Uncoated steel	Concrete
		In	In			
AmB, AmC2:						
Armour	---	---	---	---	Moderate	Moderate
Ar:						
Arrington	---	---	---	---	Low	Low
BaF:						
Barfield	Bedrock (lithic)	8-20	---	Indurated	High	Low
Gladdice	Bedrock (lithic)	20-40	---	Indurated	High	Low
Rock outcrop.						
BeB2, BeC2:						
Bewleyville	---	---	---	---	Moderate	Moderate
ByB:						
Byler	Fragipan	18-34	---	Noncemented	High	Moderate
CaD2:						
Caneyville	Bedrock (lithic)	20-40	---	Indurated	High	Moderate
Lonewood	Bedrock (lithic)	40-72	---	Indurated	Low	Moderate
CrC2, CrD2, CrE2:						
Christian	Bedrock (paralithic)	40-72	---	Very strongly cemented	High	Moderate
CwD, CwE:						
Christian	Bedrock (paralithic)	40-72	---	Very strongly cemented	High	High
Faywood	Bedrock (lithic)	20-40	---	Indurated	High	Moderate
DeD2, DeE:						
Dellrose	---	---	---	---	Moderate	Moderate
DeF:						
Dellrose	---	---	---	---	Moderate	Moderate
Mimosa	Bedrock (lithic)	40-60	---	Indurated	High	Moderate
DfC2:						
Dewey	---	---	---	---	High	Moderate
DkB2:						
Dickson	Fragipan	18-36	---	Noncemented	Moderate	Moderate
EwB, EwC2:						
Etowah	---	---	---	---	Low	Moderate
FeC2, FeD2, FeE2:						
Frederick	---	---	---	---	High	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Uncoated steel	Concrete
		In	In			
GnD:						
Garmon	Bedrock (lithic)	20-40	---	Indurated	Low	Moderate
Newbern	Bedrock (paralithic)	10-20	---	Very strongly cemented	Low	Low
	Bedrock (lithic)	10-20	---	Indurated		
GnF:						
Garmon	Bedrock (lithic)	20-40	---	Very strongly cemented	Low	Low
Newbern	Bedrock (paralithic)	10-20	---	Very strongly cemented	Low	Low
	Bedrock (lithic)	10-20	---	Indurated		
Ha:						
Hamblen	---	---	---	---	Moderate	Moderate
HhC, HhD, HhF:						
Hawthorne	Bedrock (paralithic)	20-40	---	Very strongly cemented	Low	Moderate
HoB:						
Holston	---	---	---	---	Moderate	High
HoC2:						
Holston	---	---	---	---	Moderate	Moderate
HuB, HuC:						
Humphreys	---	---	---	---	Moderate	Moderate
Hw:						
Huntington	---	---	---	---	Low	Low
Le:						
Lee	---	---	---	---	High	High
Ln:						
Lindside	---	---	---	---	Moderate	Low
Lo:						
Lobelville	---	---	---	---	High	Moderate
Me:						
Melvin	---	---	---	---	High	Low
MmD2:						
Mimosa	Bedrock (lithic)	40-60	---	Indurated	High	Moderate
MnC2, MnD2, MnE2:						
Minvale	---	---	---	---	Moderate	Moderate
MoB2:						
Monongahela	Fragipan	18-30	---	Noncemented	Moderate	Moderate
MoC2:						
Monongahela	Fragipan	18-30	---	Noncemented	Moderate	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Uncoated steel	Concrete
		In	In			
MtB2, MtC2:						
Mountview	---	---	---	---	Moderate	Moderate
No:						
Nolin	---	---	---	---	Low	Low
Oc:						
Ocana	---	---	---	---	Low	Low
Pq.						
Pits, quarry						
ReB, ReC2:						
Renox	---	---	---	---	Low	Low
SeC2, SeD2, SeE2:						
Sengtown	---	---	---	---	High	Moderate
Sm:						
Skidmore	---	---	---	---	Low	Moderate
Sn:						
Staser	---	---	---	---	Low	Low
SrB2, SrC2, SrD2:						
Sugargrove	Bedrock (paralithic)	20-60	---	Very strongly cemented	Moderate	Moderate
Su, Sv:						
Sullivan	---	---	---	---	Low	Low
TbD, TbE:						
Talbott	Bedrock (lithic)	20-40	---	Indurated	High	Moderate
Rock outcrop.						
TrB, TrC2:						
Trace	---	---	---	---	Low	Moderate
W.						
Water						
WaB2, WaC2, WaD2:						
Waynesboro	---	---	---	---	Moderate	Moderate

Table 20.—Classification of the Soils

Soil name	Family or higher taxonomic class
Armour	Fine-silty, mixed, active, thermic Ultic Hapludalfs
Arrington	Fine-silty, mixed, superactive, thermic Cumulic Hapludolls
Barfield	Clayey, mixed, active, thermic Lithic Hapludolls
Bewleyville	Fine-silty, siliceous, semiactive, thermic Typic Paleudults
Byler	Fine-silty, siliceous, semiactive, thermic Oxyaquic Fragiudalfs
Caneyville	Fine, mixed, active, mesic Typic Hapludalfs
Christian	Fine, mixed, semiactive, mesic Typic Hapludults
Dellrose	Fine-loamy, mixed, semiactive, thermic Typic Paleudults
Dewey	Fine, kaolinitic, thermic Typic Paleudults
Dickson	Fine-silty, siliceous, semiactive, thermic Glossic Fragiudults
Etowah	Fine-loamy, siliceous, semiactive, thermic Typic Paleudults
Faywood	Fine, mixed, active, mesic Typic Hapludalfs
Frederick	Fine, mixed, semiactive, mesic Typic Paleudults
Garmon	Fine-loamy, mixed, semiactive, mesic Dystric Eutrudepts
Gladdice	Fine, mixed, active, thermic Vertic Hapludalfs
Hamblen	Fine-loamy, siliceous, semiactive, thermic Fluvaquentic Eutrudepts
Hawthorne	Loamy-skeletal, siliceous, semiactive, thermic Typic Dystrudepts
Holston	Fine-loamy, siliceous, semiactive, thermic Typic Paleudults
Humphreys	Fine-loamy, mixed, semiactive, thermic Ultic Hapludalfs
Huntington	Fine-silty, mixed, active, mesic Fluventic Hapludolls
Lee	Fine-loamy, siliceous, semiactive, nonacid, thermic Fluvaquentic Endoaquepts
Lindside	Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Lobelville	Fine-loamy, siliceous, active, thermic Fluvaquentic Dystrudepts
Lonewood	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Melvin	Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Mimosa	Fine, mixed, semiactive, thermic Typic Hapludalfs
Minvale	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Monongahela	Fine-loamy, mixed, semiactive, mesic Typic Fragiudults
Mountview	Fine-silty, siliceous, semiactive, thermic Oxyaquic Paleudults
Newbern	Loamy, mixed, active, mesic Lithic Eutrudepts
Nolin	Fine-silty, mixed, active, mesic Dystric Fluventic Eutrudepts
Ocana	Fine-loamy, mixed, active, thermic Dystric Fluventic Eutrudepts
Renox	Fine-loamy, mixed, semiactive, mesic Ultic Hapludalfs
Sengtown	Fine, mixed, semiactive, thermic Typic Paleudalfs
Skidmore	Loamy-skeletal, mixed, semiactive, mesic Dystric Fluventic Eutrudepts
Staser	Fine-loamy, mixed, active, thermic Cumulic Hapludolls
Sugargrove	Fine-loamy, mixed, semiactive, thermic Typic Hapludults
Sullivan	Fine-loamy, siliceous, active, thermic Dystric Fluventic Eutrudepts
Talbott	Fine, mixed, semiactive, thermic Typic Hapludalfs
Trace	Fine-silty, mixed, semiactive, thermic Ultic Hapludalfs
Waynesboro	Fine, kaolinitic, thermic Typic Paleudults

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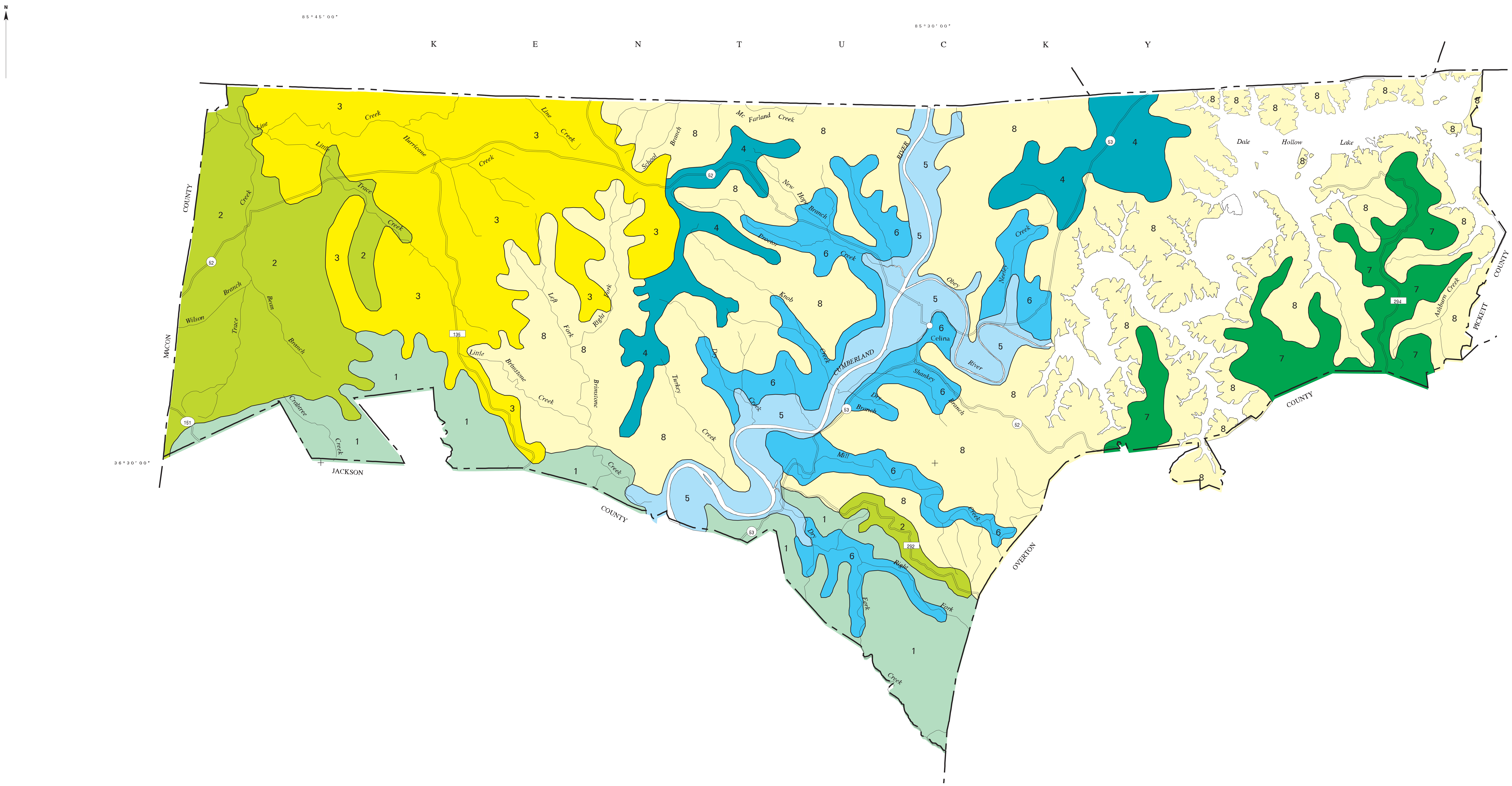


LEGEND

1	Hawthorne
2	Sugargrove - Hawthorne
3	Frederick - Mountview - Bewleyville
4	Frederick - Christian - Minvale
5	Armour - Holston - Lindside
6	Dellrose - Renox - Barfield
7	Christian - Sengtown - Etowah
8	Garmon - Newbern

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TENNESSEE AGRICULTURAL EXPERIMENT STATION

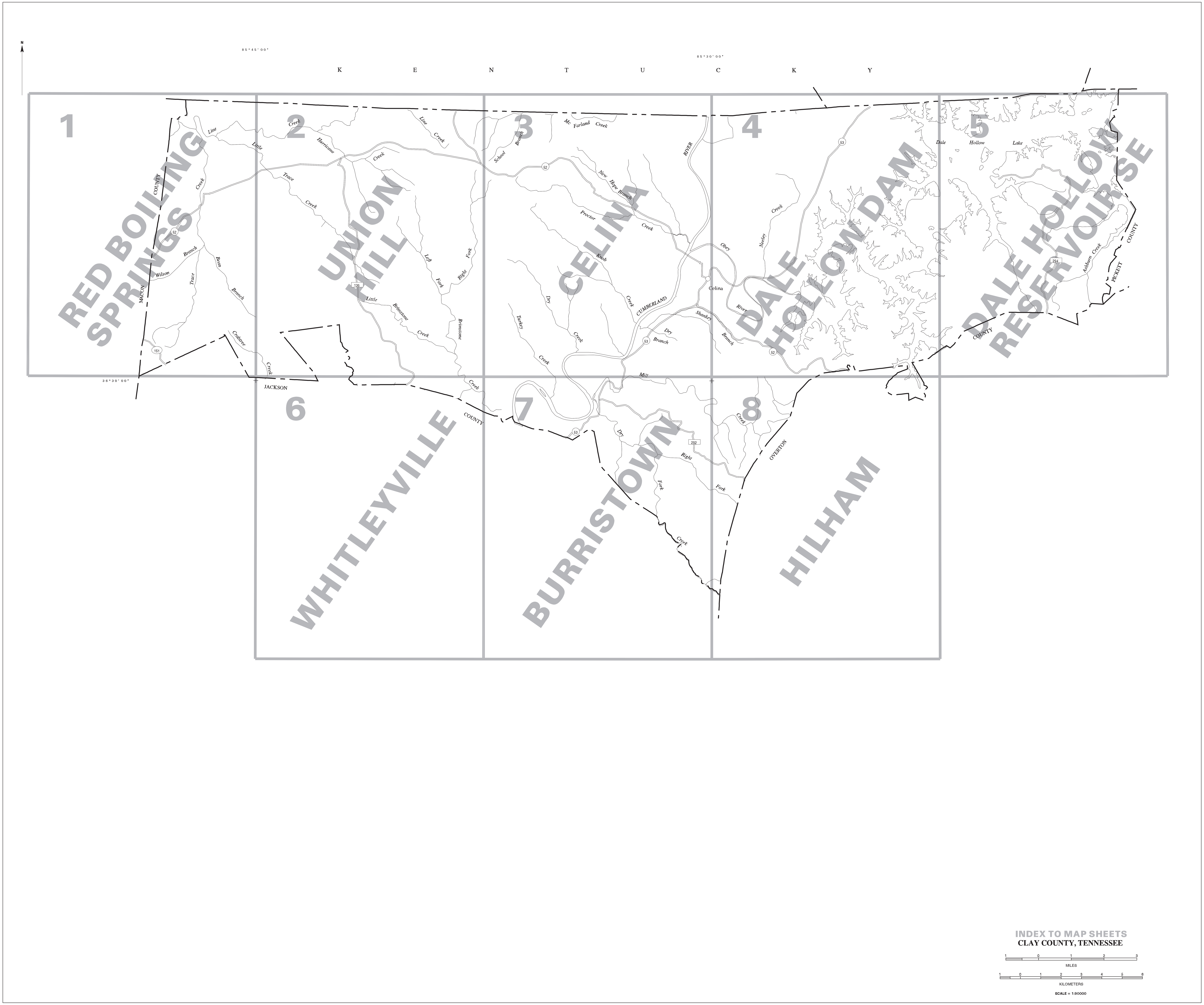
GENERAL SOIL MAP
CLAY COUNTY, TENNESSEE

MILES

KILOMETERS

SCALE = 1:90000

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.


K E N T U C K Y
1 RED BOILING SPRINGS
2 UNION HILL
3 CELINA
4 DALE HOLLOW DAM
5 DALE HOLLOW RESERVOIR SE
6 WHITLEYVILLE
7 BURRISTOWN
8 HILHAM
MACON COUNTY
JACKSON COUNTY
OVERTON
PICKETT COUNTY
CUMBERLAND RIVER
Obey River
Dale Hollow Lake
Celina
INDEX TO MAP SHEETS
CLAY COUNTY, TENNESSEE
MILES
KILOMETERS
SCALE = 1:80000

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE

TENNESSEE AGRICULTURAL EXPERIMENT STATION
TENNESSEE DEPARTMENT OF AGRICULTURE
CLAY COUNTY BOARD OF COMMISIONERS
CLAY COUNTY SOIL CONSERVATION DISTRICT

SOIL LEGEND

Map symbols consist of a combination of letters and numbers. The first two letters are listed alphabetically and represent the kind of soil. In most map units, the first letter is a capital letter and the second letter is a small letter. A capital letter following the small letter indicates the class of slope. Symbols without a slope letter are for nearly level soils or miscellaneous areas. A number 2 following the slope letter indicates that the soil is moderately eroded, and a number 3 indicates that it is severely eroded. In broadly defined units, the letters are all capitals and represent an undifferentiated group. These units consist of two or more components that are not consistently associated geographically and may or may not occur in that map unit. They are more broadly defined because of a common feature, such as flooding, stoniness, or steep slopes, and the use and management of the soils are similar.

SYMBOL	NAME
AmB	Armour silt loam, 2 to 5 percent slopes
AmC2	Armour silt loam, 5 to 12 percent slopes, eroded
Ar	Arrington silt loam, occasionally flooded
BaF	Barfield-Gladdice-Rock outcrop complex, 20 to 70 percent slopes
BeB2	Bewleyville silt loam, 2 to 5 percent slopes, eroded
BeC2	Bewleyville silt loam, 5 to 12 percent slopes, eroded
ByB	Byler silt loam, 2 to 5 percent slopes
CaD2	Caneyville-Lonewood complex, 6 to 25 percent slopes, eroded, rocky
CrC2	Christian loam, 5 to 12 percent slopes, eroded
CrD2	Christian loam, 12 to 20 percent slopes, eroded
CrE2	Christian loam, 20 to 40 percent slopes, eroded
CwD	Christian-Faywood complex, 12 to 20 percent slopes, rocky
CwE	Christian-Faywood complex, 20 to 40 percent slopes, very rocky
DeD2	Dellrose gravelly silt loam, 12 to 20 percent slopes, eroded
DeE	Dellrose gravelly silt loam, 20 to 45 percent slopes
DeF	Dellrose and Mimosa soils, 20 to 60 percent slopes
DfC2	Dewey silt loam, 5 to 12 percent slopes, eroded
DkB2	Dickson silt loam, 2 to 5 percent slopes, eroded
EwB	Etowah loam, 2 to 5 percent slopes
EwC2	Etowah loam, 5 to 12 percent slopes, eroded
FeC2	Frederick loam, 5 to 12 percent slopes, eroded
FeD2	Frederick loam, 12 to 20 percent slopes, eroded
FeE2	Frederick loam, 20 to 40 percent slopes, eroded
GnD	Garmon-Newbern complex, 5 to 20 percent slopes
GnF	Garmon-Newbern complex, 40 to 80 percent slopes, rocky
Ha	Hamblen loam, depressional
HhC	Hawthorne gravelly silt loam, 5 to 20 percent slopes
HhD	Hawthorne gravelly silt loam, 12 to 20 percent slopes
HhF	Hawthorne gravelly silt loam, 20 to 70 percent slopes
HoB	Holston loam, 2 to 5 percent slopes
HoC2	Holston loam, 5 to 12 percent slopes, eroded
HuB	Humphreys gravelly silt loam, 2 to 5 percent slopes
HuC	Humphreys gravelly silt loam, 5 to 12 percent slopes
Hw	Huntington silt loam, rarely flooded
Le	Lee gravelly silt loam, occasionally flooded
Ln	Lindside silt loam, occasionally flooded
Lo	Lobelville loam, occasionally flooded
Me	Melvin silt loam, ponded
MmD2	Mimosa silt loam, 12 to 20 percent slopes, eroded
MnC2	Minvale gravelly loam, 5 to 12 percent slopes, eroded
MnD2	Minvale gravelly loam, 12 to 20 percent slopes, eroded
MnE2	Minvale gravelly loam, 20 to 40 percent slopes, eroded
MoB2	Monongahela silt loam, 2 to 5 percent slopes, eroded
MoC2	Monongahela silt loam, 5 to 12 percent slopes, eroded
MtB2	Mountview silt loam, 2 to 5 percent slopes, eroded
MtC2	Mountview silt loam, 5 to 12 percent slopes, eroded
No	Nolin silt loam, occasionally flooded
Oc	Ocana gravelly silt loam, occasionally flooded
Pq	Pits, quarry
ReB	Renox silt loam, 2 to 5 percent slopes
ReC2	Renox silt loam, 5 to 12 percent slopes, eroded
SeC2	Sengtown cobbly loam, 5 to 12 percent slopes, eroded
SeD2	Sengtown cobbly loam, 12 to 20 percent slopes, eroded
SeE2	Sengtown cobbly loam, 20 to 40 percent slopes, eroded
Sm	Skidmore gravelly loam, occasionally flooded
Sn	Staser fine sandy loam, rarely flooded
SrB2	Sugargrove gravelly silt loam, 2 to 5 percent slopes, eroded
SrC2	Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded
SrD2	Sugargrove gravelly silt loam, 12 to 20 percent slopes, eroded
Su	Sullivan silt loam, depressional
Sv	Sullivan silt loam, occasionally flooded
TbD	Talbott-Rock outcrop complex, 5 to 20 percent slopes
TbE	Talbott-Rock outcrop complex, 20 to 40 percent slopes
TrB	Trace silt loam, 2 to 5 percent slopes
TrC2	Trace silt loam, 5 to 12 percent slopes, eroded
W	Water
WaB2	Waynesboro loam, 2 to 5 percent slopes, eroded
WaC2	Waynesboro loam, 5 to 12 percent slopes, eroded
WaD2	Waynesboro loam, 12 to 20 percent slopes, eroded

FEATURE AND SYMBOL LEGEND FOR SOIL SURVEY

SOIL SURVEY FEATURES

SOIL DELINEATIONS AND SYMBOLS — AmB HoB

Bedrock escarpment

Borrow pit

Landfill

Mine or quarry

Rock outcrop

Sinkhole

Short steep slope

Wet spot

CULTURAL FEATURES

BOUNDARIES

County or parish

Field sheet matchline & neatline

ROAD EMBLEMS

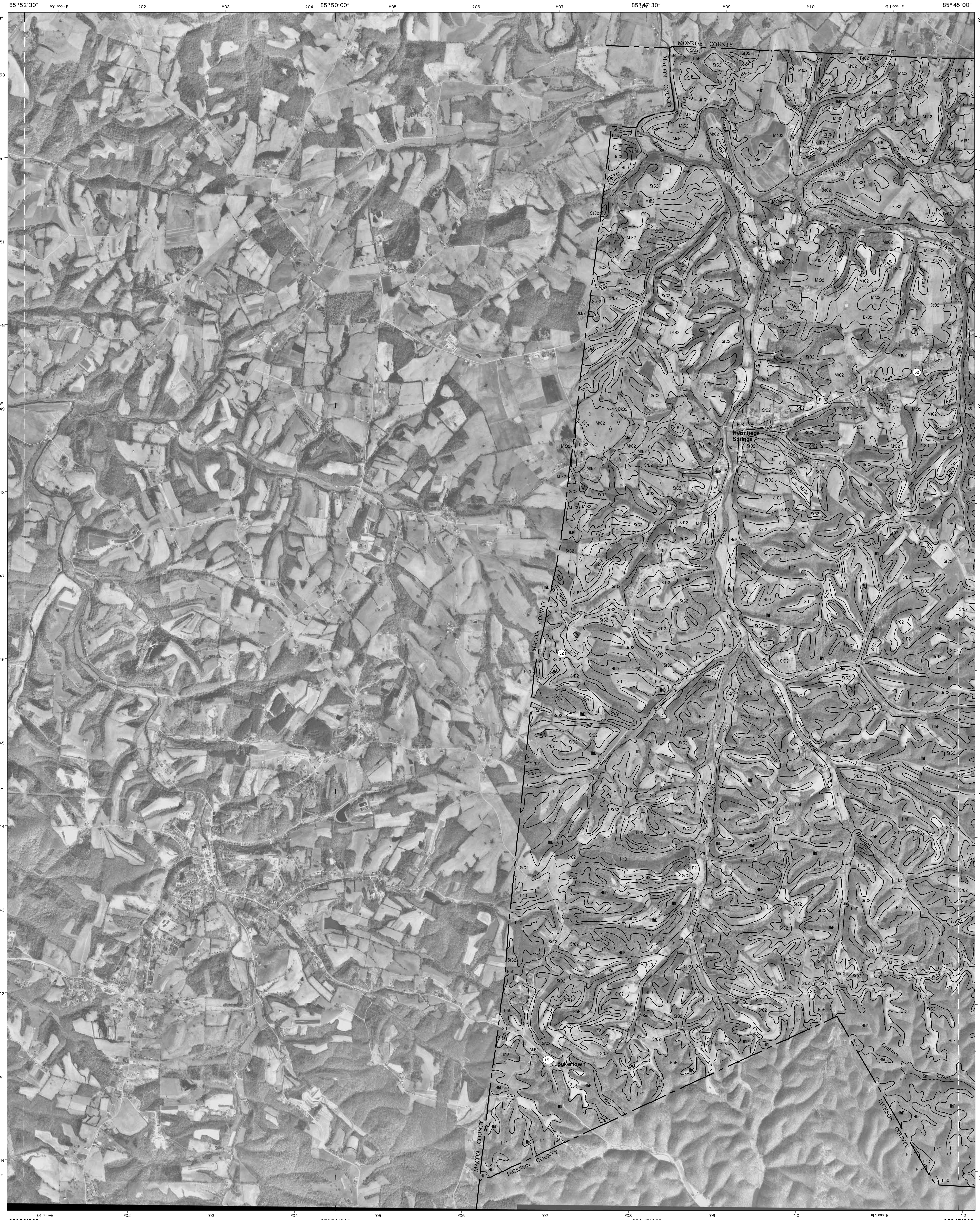
State — 52

HYDROGRAPHIC FEATURES

Drainage — Label only

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
RED BOILING SPRINGS QUADRANGLE (OVERSIZED)
SHEET NUMBER 1 OF 8



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

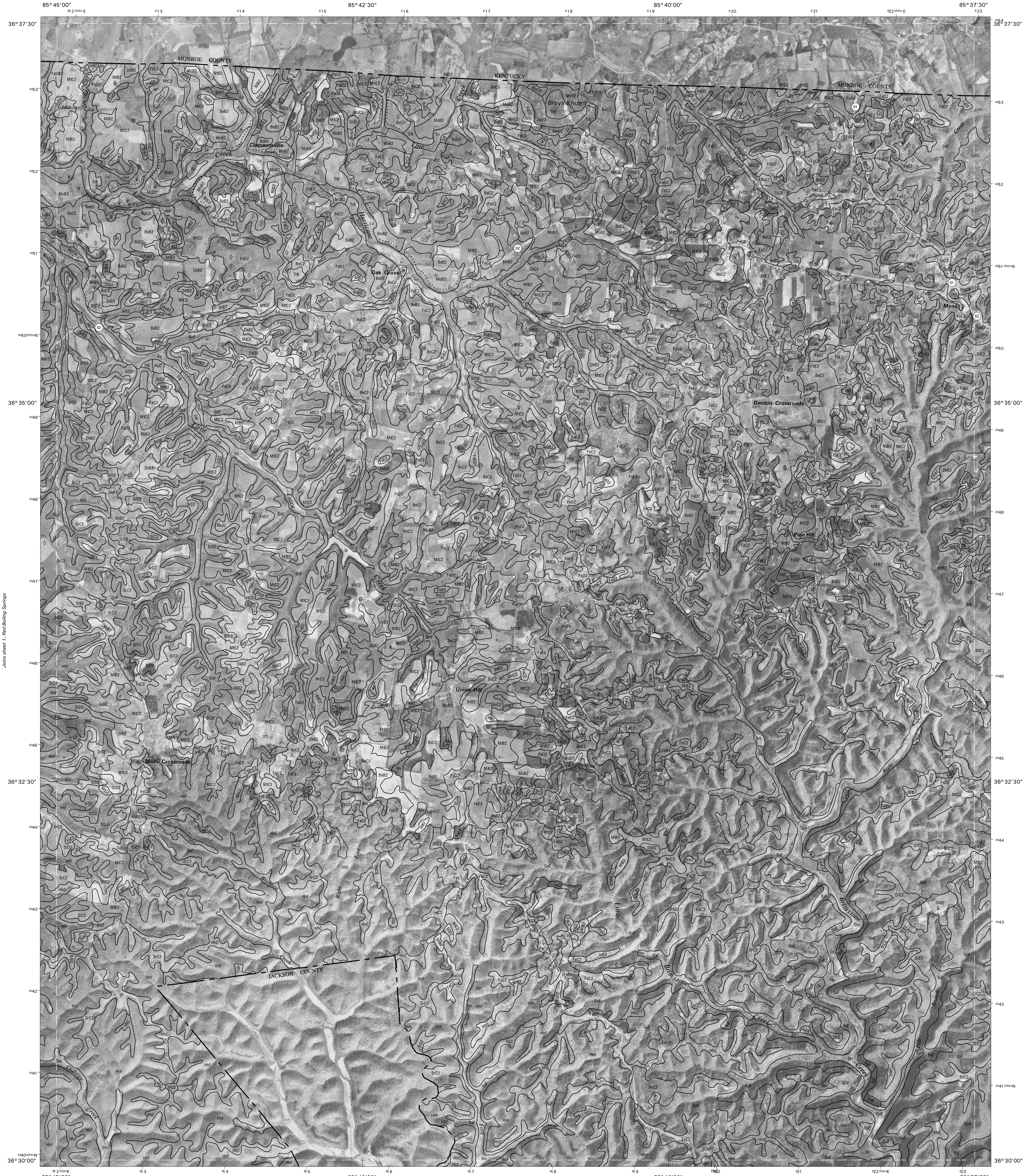
2 UNION HILL
6 WHITLEYVILLE
INDEX TO ADJOINING 7.5 MAPS

RED BOILING SPRINGS, (OVERSIZED) TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 8

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
UNION HILL QUADRANGLE
SHEET NUMBER 2 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1 RED BOILING SPRINGS
3 CELINA
6 WHITLEYVILLE
7 BURRISTOWN

INDEX TO ADJOINING 7.5 MAPS

UNION HILL, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 8

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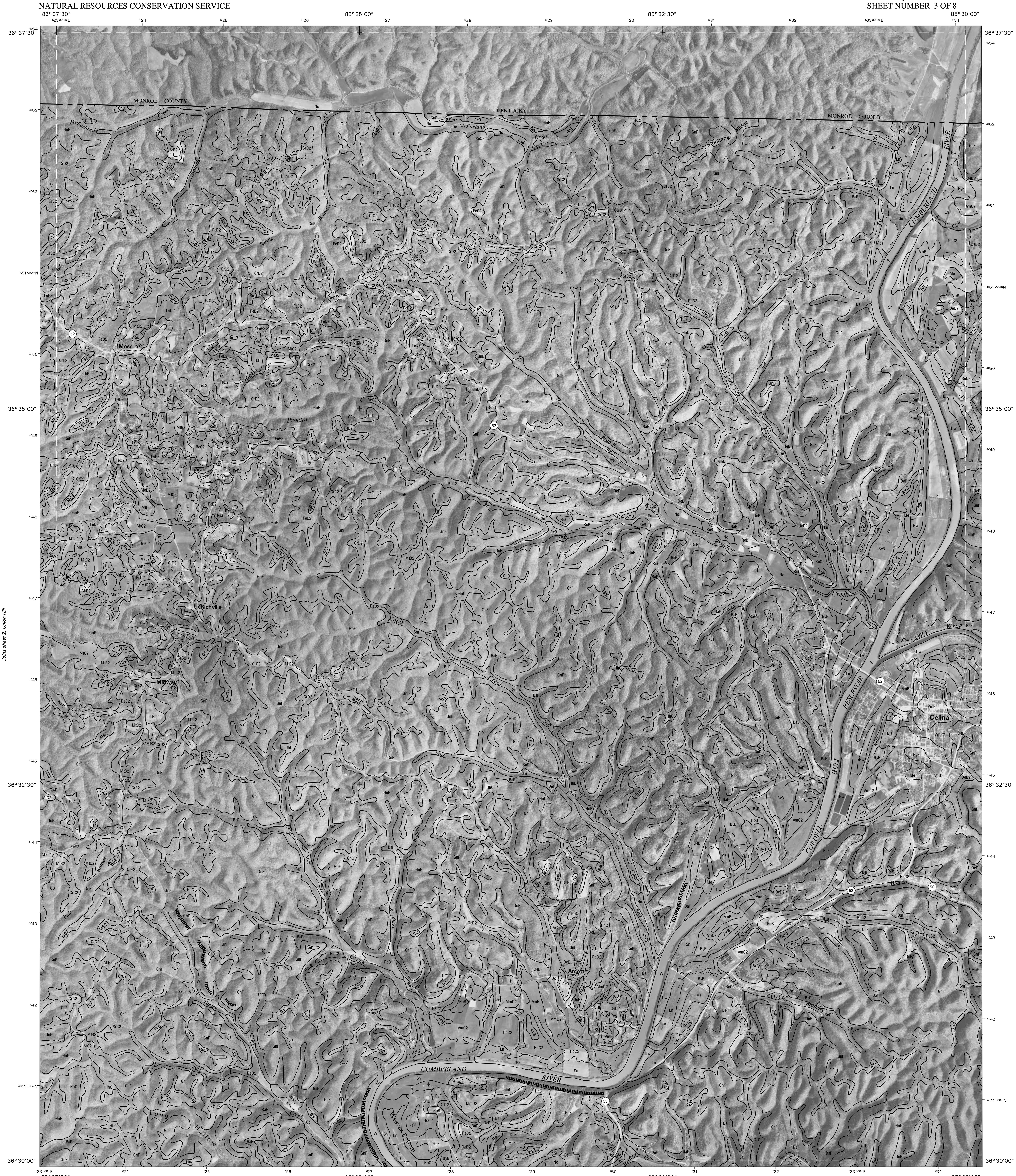
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
CELINA QUADRANGLE
SHEET NUMBER 3 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

2		4
6	7	8

2 UNION HILL
4 DALE HOLLOW DAM
6 WHITLEYVILLE
7 BURRISTOWN
8 HILHAM

INDEX TO ADJOINING 7.5 MAPS

CELINA, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 8

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UNITED STATES
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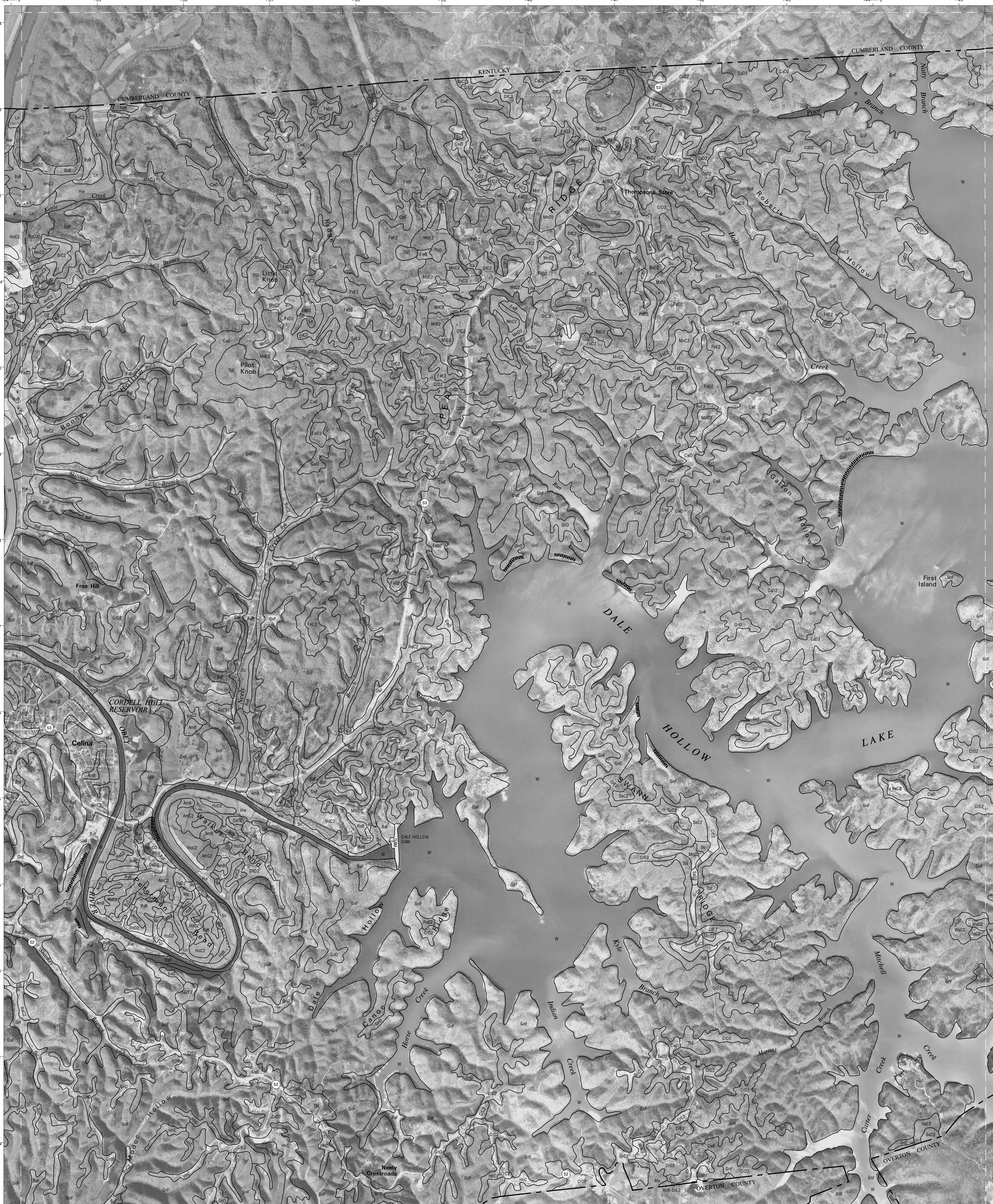
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
DALE HOLLOW DAM QUADRANGLE
SHEET NUMBER 4 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

3 CELINA
5 DALE HOLLOW RESERVOIR SE
7 BURRISTOWN
8 HILHAM

DALE HOLLOW DAM, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 8

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

4 DALE HOLLOW DAM
8 HILHAM

INDEX TO ADJOINING 7.5 MAPS

DALE HOLLOW RESERVOIR SE, (OVERSIZED) TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 8

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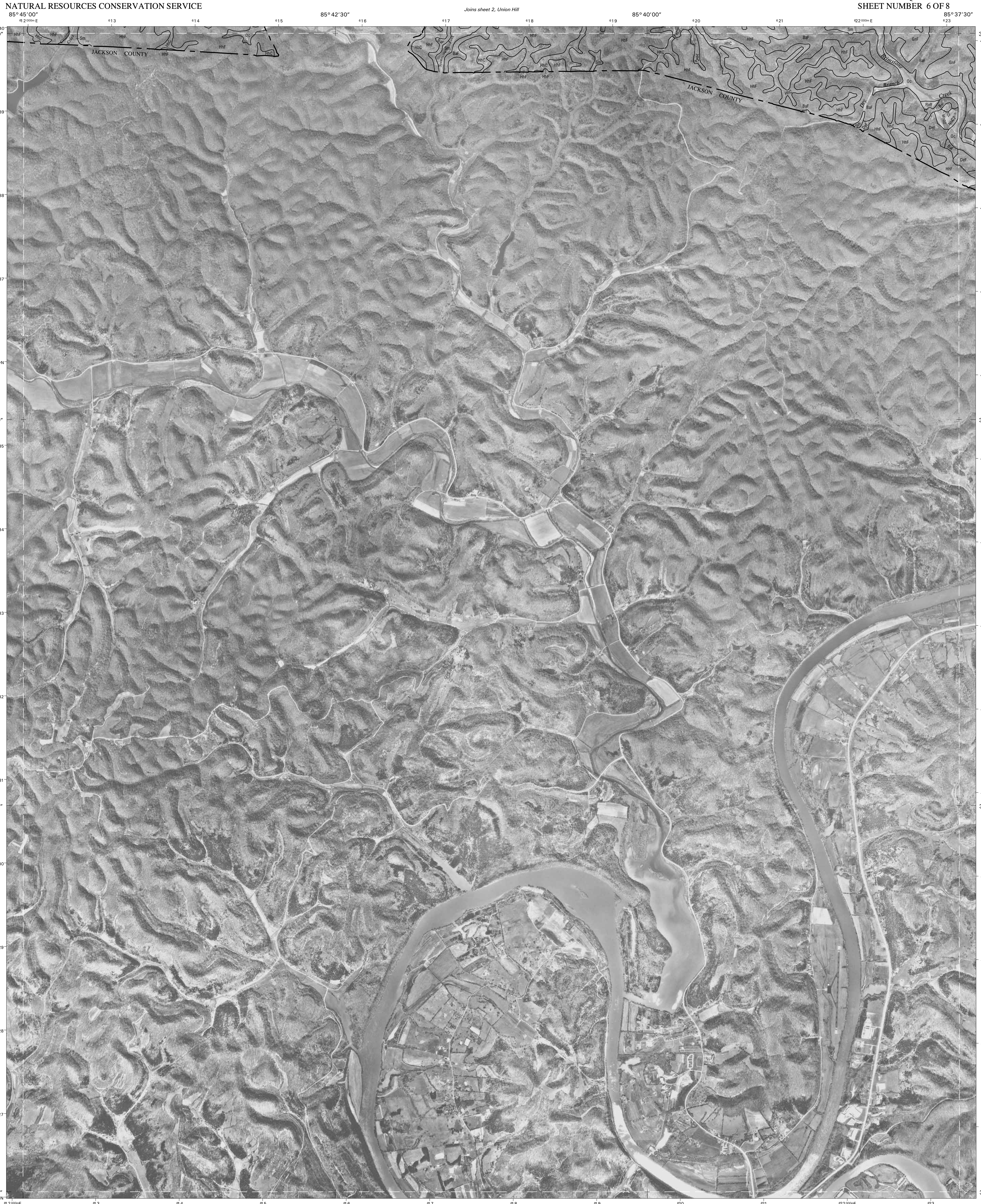
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
WHITLEYVILLE QUADRANGLE
SHEET NUMBER 6 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

1	2	3
		7

1 RED BOILING SPRINGS
2 UNION HILL
3 CELINA
7 BURRISTOWN

INDEX TO ADJOINING 7.5 MAPS

WHITLEYVILLE, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 8

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UNITED STATES
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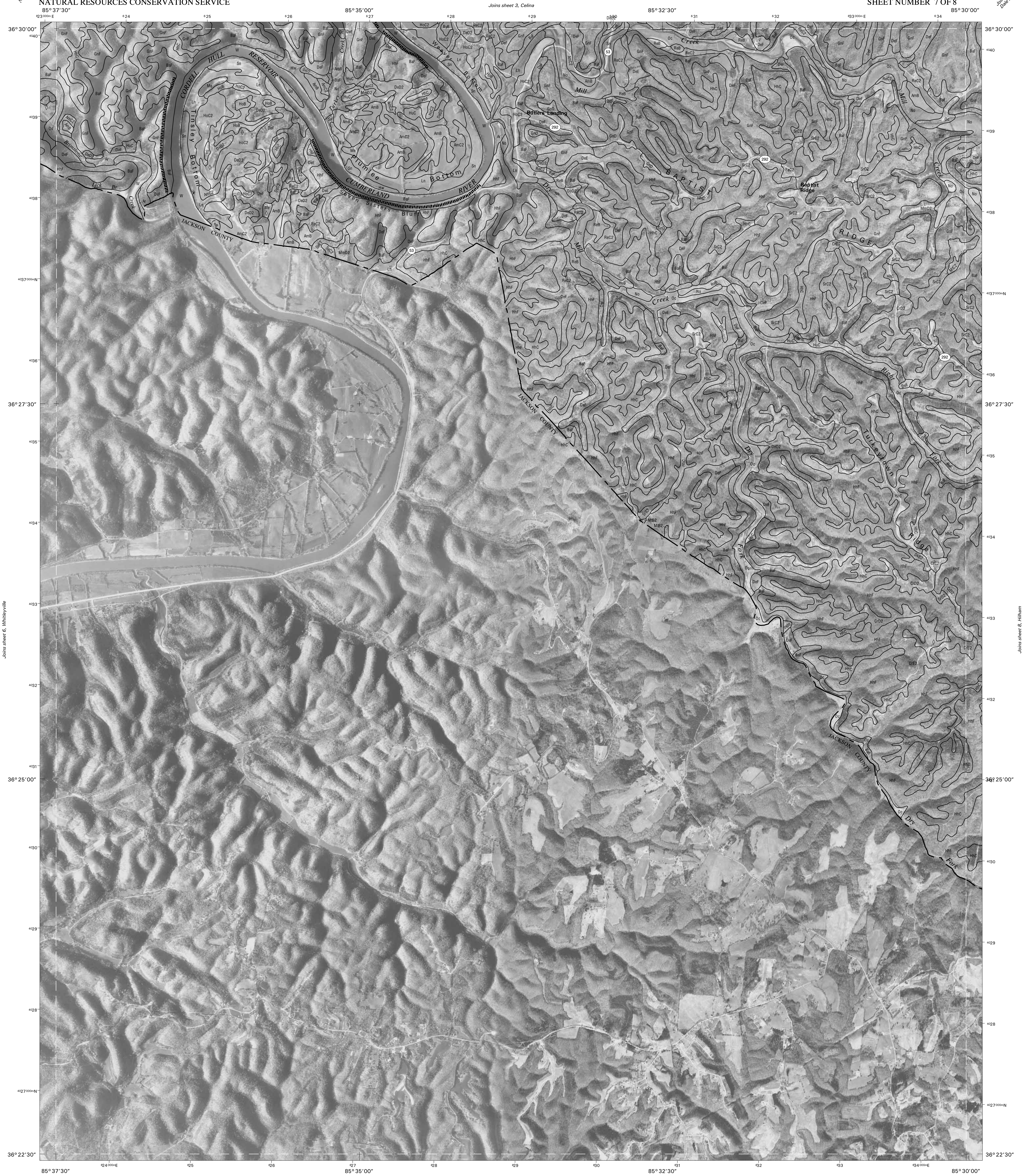
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
BURRISTOWN QUADRANGLE
SHEET NUMBER 7 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

2	3	4
6		8

2 UNION HILL
3 CELINA
4 DALE HOLLOW DAM
6 WHITLEYVILLE
8 HILHAM

INDEX TO ADJOINING 7.5 MAPS

BURRISTOWN, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 8

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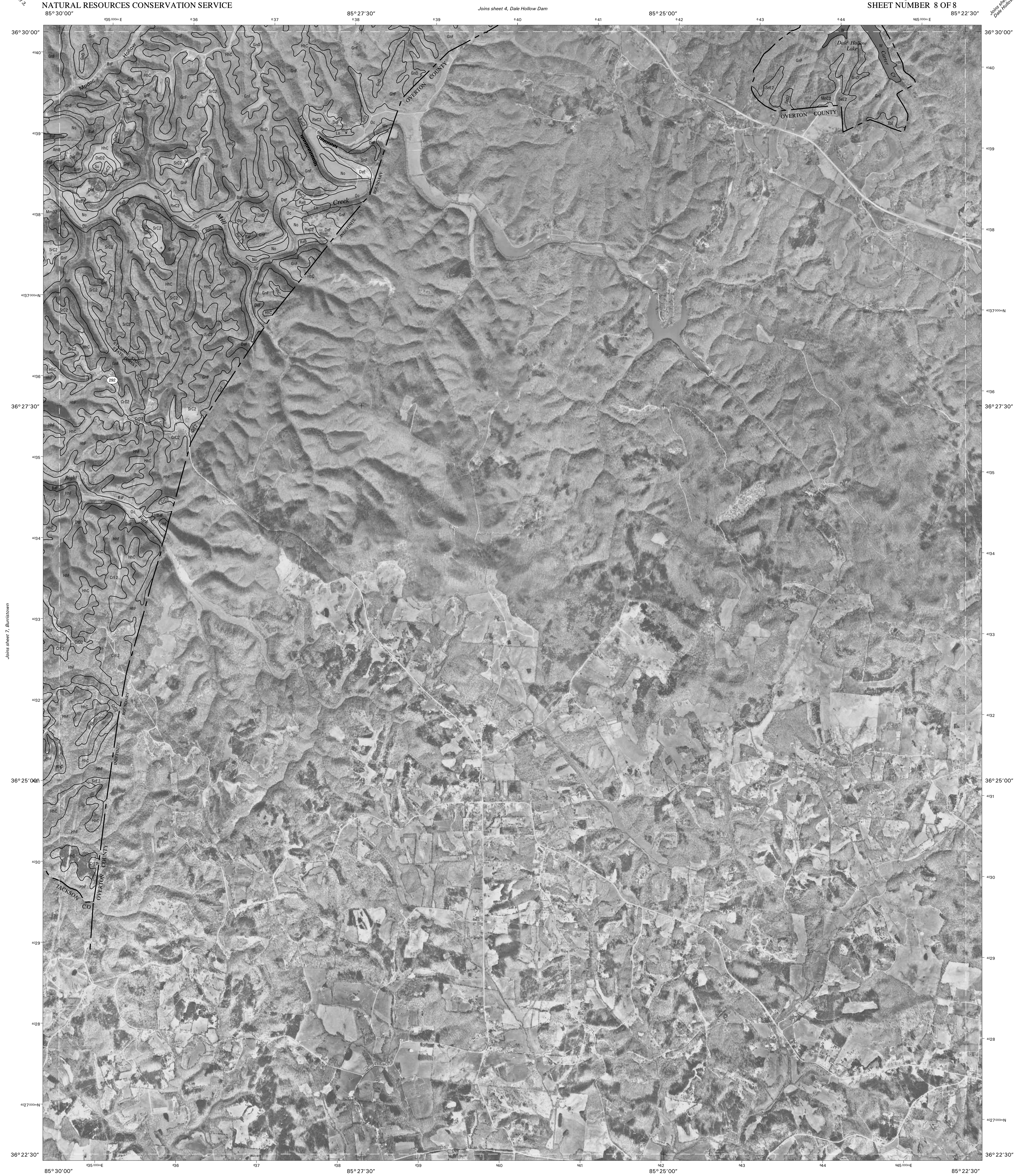
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CLAY COUNTY, TENNESSEE
HILHAM QUADRANGLE
SHEET NUMBER 8 OF 8



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS

3 CELINA
4 DALE HOLLOW DAM
5 DALE HOLLOW RESERVOIR SE
7 BURRISTOWN

HILHAM, TENNESSEE
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 8

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